Science Lesson Plans

Level 5

Term 1

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Term 1

Week 1

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
1	Life Systems	Human organ Systems	1	Identification of cell as basic unit of life	H.W
1		do	2	To differentiate between plan and animal cells	H.W
1		do	3	To identify various parts of plant and animal cells (project).	H.W
1			4	To understand what are tissues and organs	H.W
1		do	5	Assessment	

Level 5	Lesson plan	Life systems
Term 1		
Week 1		
Day 1		

Topic: Human organ systems

Objective: Identification of the cell as basic unit of the life

Activity: written work

Materials: chalk, pencils, note books

Procedure

Warm-up Q/A

- Ask, what are we made up of?
- What are other living things such as plants and animals made up of?
- Listen to their responses then explain.

Explanation

- All living things are composed of cells.
- Cells are the smallest units of life.
- Cells are the building blocks. Imagine a wall is made up of bricks. We build a wall by combining individual bricks. Similarly all living things are made up of the tiny building blocks called cells.
- Most cells are very, very small, so tiny that they can only be seen with the aid of a microscope.
- Do you think all cells are same? No, all cells are not same.
- Cells can be different in shape and size.
- Their function is different too.
- For example, your body is composed of billions of cells! Within your body, cells have different functions. We have blood cells, skin cells, brain cells...the list goes on.
- Despite their differences, cells in living organisms for the most part have similar structures and functions.
- Plant cells are different from animal cells.

Activity: Written work

Task:

- What are all living things made up of? (Living things are made up of cells)
- What are cells? (Cells are the building blocks.)
- Are all cells same? (No, all cells are not same).
- How are they different? (Cells are different in their shape, size and function)

- Can you name some of the different cells that make up your body? (Blood cells, skin cells, brain cells, bone cells.... etc)
- Are plant cells different from animal cells? (Yes a plant cell is different from animal cell).

Wrap-up Q/A

What are cells?

H.W Revise the work done in class.

Level 5	Lesson plan	Life systems
Term 1		
Week 1		
Day 2		

Topic: Human organ systems

Objective: To differentiate between plant and animal cells

Activity: Written work

Materials: copy of worksheet for each child

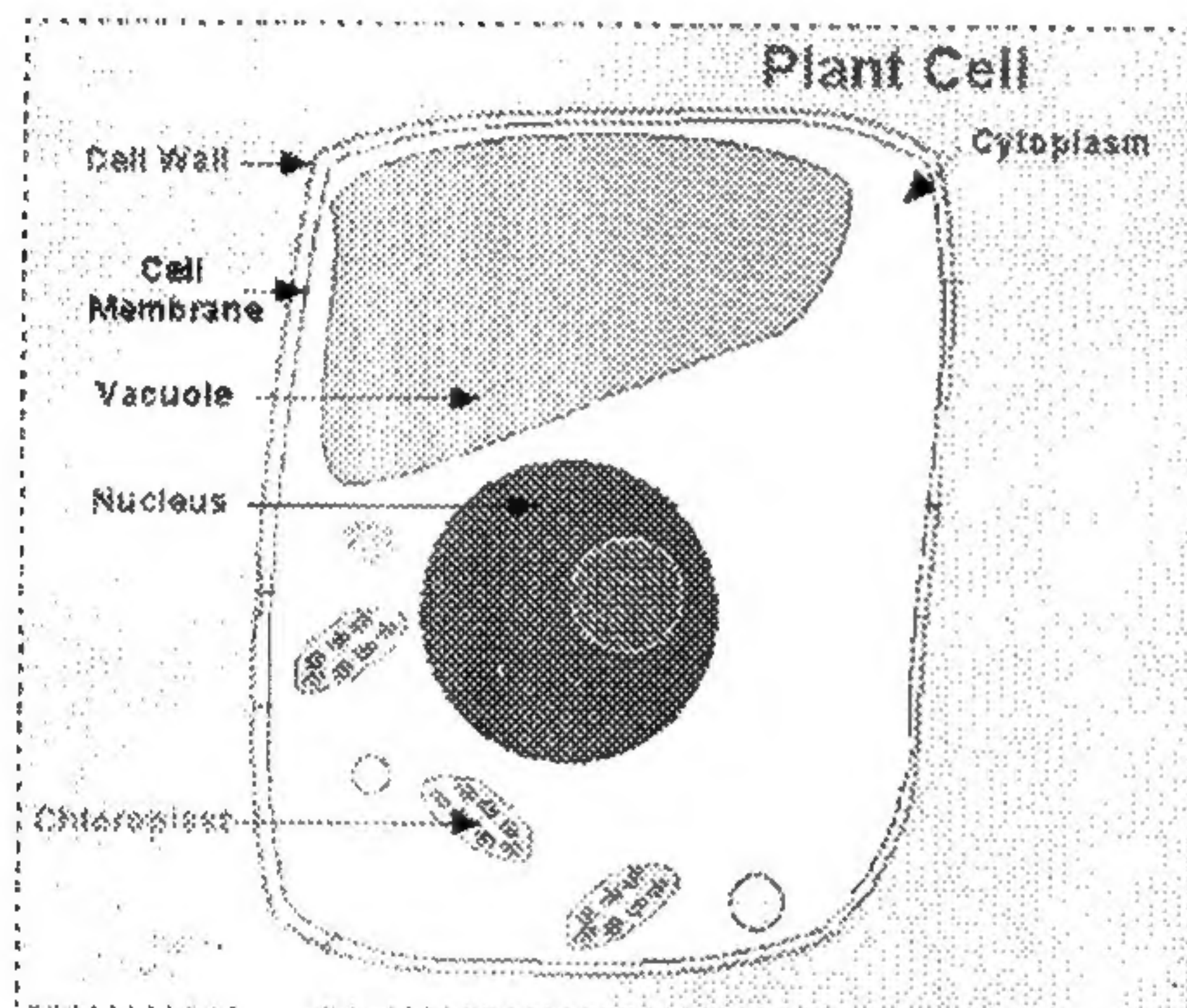
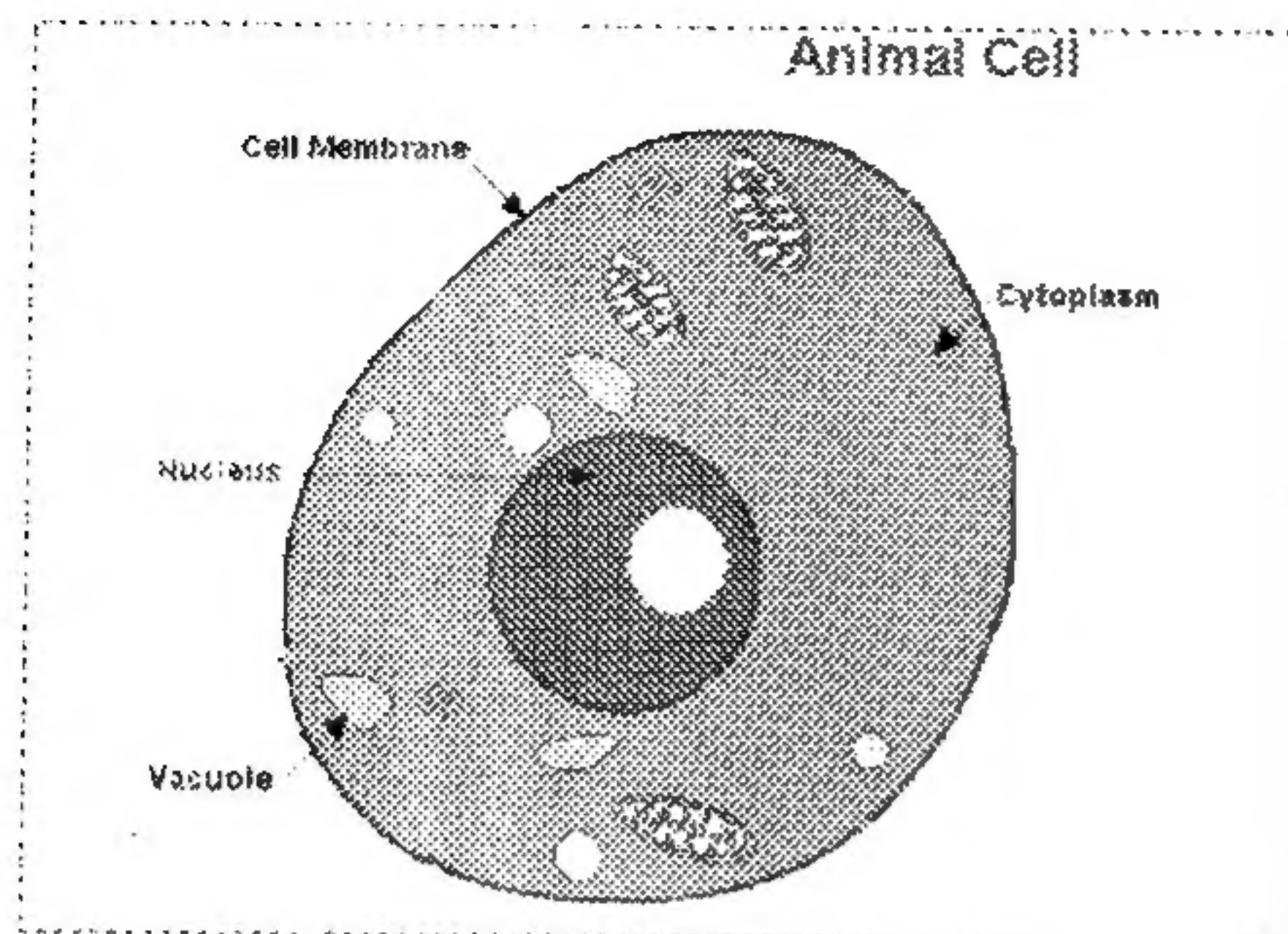
Procedure

Warm-up Q/A

- Remind the students about previous lesson and ask,
- What are all living things made up of?
- What are cells
- How are they different?
- Can you name some of the different cells that make up your body?
- Are plant cells different from animal cells?

Then tell now we will discuss how plant cells are different from animal cells?

Explanation

- Explain,
- Although cells are the smallest building unit of the living things they have structure too.
- Plant cells have their own structure and parts and animal cells have their own structure and parts.
- Draw these diagrams on the chalkboard and explain.

Cell wall: This is the outer layer of the plant cell

Cell membrane: This is the outer layer of the animal cell and the second layer of the animal cell

Cytoplasm: this is a jelly like substance present inside the cell. It is transparent. It is present between the cell membrane and the nucleus.

Nucleus: This is a somewhat round or oval-shaped body located in the middle of the animal cell. In plant cells, the nucleus is usually found near the cell wall. The nucleus controls all the functions of the cell.

Vacuoles: Vacuoles are filled with water. In plant cells, vacuoles are large and occupy most of the space. In animal cells, vacuoles are small.

Chloroplast: Chloroplast is only found in green plant cells. This is green in color and is found in the cytoplasm. It is green because of the presence of a substance called chlorophyll.

Activity: Worksheet

Distribute the worksheet and explain the task.

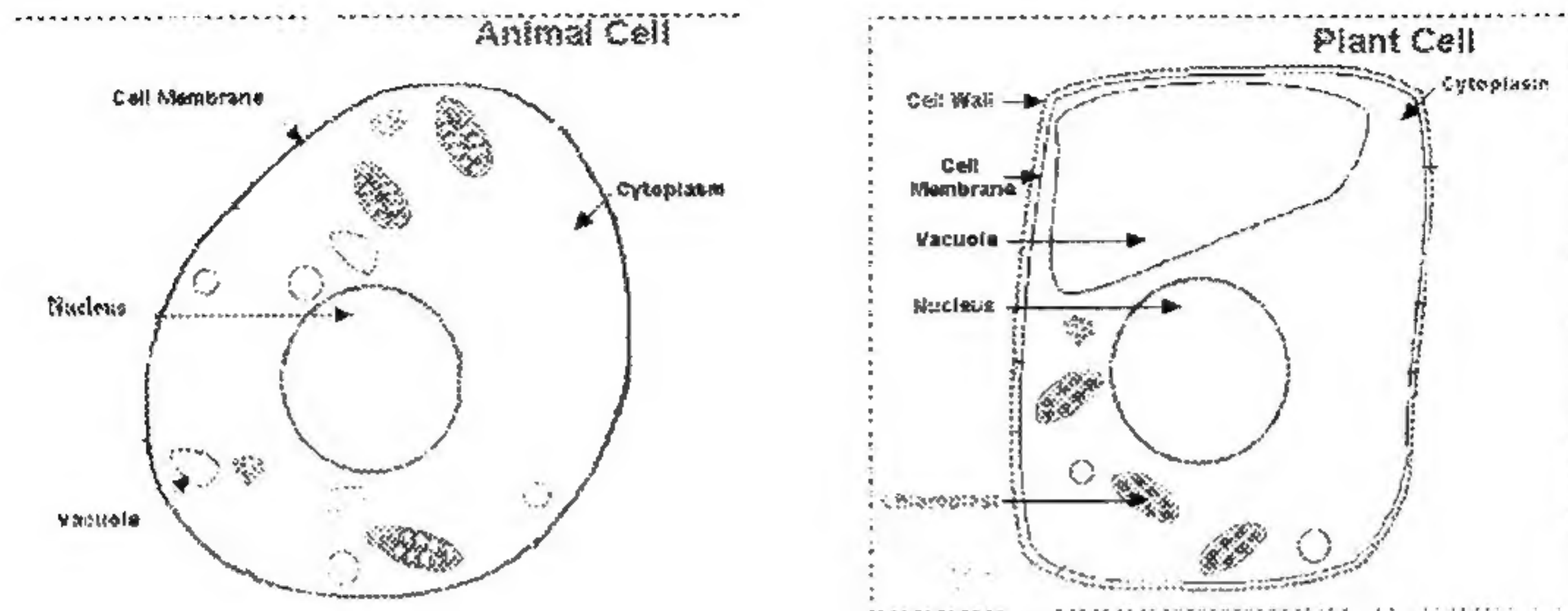
Wrap-up Q/A

Are animal cells different from plant cells?

H.W Revise the work done in class

Level: 5 Term: 1
Week: 1 Day: 2

Animal and plant cells

Worksheet

Look at the diagrams of plant and animal cells and List the differences

Animal cell	Plant Cell

Draw, color and label an animal and a plant cell.

Level 5	Lesson plan	Life systems
Term 1		
Week 1		
Day 3		

Topic: Human organ systems

Objectives:

Students will be able to:

1. Identify the various parts of plant and animal cells.
2. Compare and contrast the structures of plants and animals.

Activity: 1 making a one dimensional model of a plant and animal cells

Materials: 1 Drawing of plant and animal cells, plasticine or play dough assorted colors

Procedure

Warm-up Q/A

Revise the structure of cell with the students.

Divide them in groups.

Note: Pick out activity that you can manage easily

Activity: 1

- Let the students draw plant and animal cells on A4 size pieces of chart paper.
- Then tell them to fill up the areas with plasticine of different colors.
- Then tell them to label the parts.

Follow-up discussion

Invite each group to present their work and explain the difference between plant and animal cells.

TYING IT ALL TOGETHER:

- The students are excited to see their parts in the cell and this leads to an excellent opportunity for students to share ideas, reasons, and information with the groups and the class

  This is also an ideal opportunity to compare the similarities and differences of the two types of cells.

- Display the students' work and invite other classes to see.

Level 5	Lesson plan	Life systems
Term 1		
Week 1		
Day 4		

Topic: Human organ systems

Objective: To understand what is a tissue and organ

Activity: Explanation, written work

Materials: Copy of the worksheet for each child, pencils and chalk

Procedure

Warm-up Q/A

- Ask what are the bodies of plants and animals made up of? (Cells)
- Are all cells the same? (No)
- How are they different? (Shape, size, function, structure)
- Then ask what is a tissue?
- Listen to their responses and then explain.

Explanation

- The bodies of plants animals and humans are made up of millions of cells.
- Each part of the body is made up of same type of the cells, which perform the same function.
- For example your skin is made up of group of one type of cells, which are different from the cells of your hair.
- Your hair is made up of group of one type of cells also.
- Similarly your muscles are made up of groups of same type of muscle cells.
- These muscle cells are different from your hair and skin cells.
- **When same type of cells is grouped together we call it a tissue.**
- Such many hair cells make a hair tissue.
- Many skin cells make up a skin tissue.
- Many muscle cells together make up a muscle tissue.
- Similarly many brain cells together makeup a brain tissue.
- A drop of blood is made up of many blood cells so it is also a tissue.
- Then ask, Can you tell me what an organ is?
- Listen to their responses and then tell.

- **When many tissues join together they make up an organ.**
- Such as your skin is an organ made up of skin tissues.
- Your eyes, nose, ears, hands, arms are all organs made up of muscle, skin and bone tissues
- You brain, heart, lungs, liver, stomach etc are all organs made up of tissues. Tissues are made up of cells.
- Similarly a plant leaf is an organ, which is made up of leaf tissues, and these tissues are made up of leaf cells.
- To check their understanding ask,
- What is a tissue?
- What is an organ?

Activity: Written work

Distribute the worksheet and explain the task.

Wrap-up Q/A

- What is a tissue?
- What is an organ?

Level: 5 Term: 1

Week: 1 Day: 4

Tissues and Organs

Worksheet

What is a tissue?

____

____

____

What is an organ?

____

____

____

Read the list and separate tissues from the organs.

A drop of blood, your heart, a piece of bone, your brain, a piece of hair, your lungs, a flake of skin, a plant leaf, a small piece of plant leaf, your skull.

Tissues	Organs

Level 5	**Assessment**	**Life systems**
Term 1		
Week 1		
Day 5		

Note: Use questions and worksheets given at the end of each lesson.

Science Lesson Plans

Level 5
Term 1

Week 2

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
2	Life Systems	Human organ Systems	1	To identify different organ systems in human body	H.W
2		do	2	Identification of the skin as an organ	
2		do	3	Identification of the skin as an organ	H.W
2			4	To understand the function of muscular system	H.W
2		do	5	Assessment	

Level 5	Lesson plan	Life systems
Term 1		
Week 2		
Day 1		

Topic: Human Organ Systems

Objective: To identify different organs and parts of the human body
Activity: drawing, written work

Materials: Body part worksheet, chalk, pencils

Warm-up Q/A

- Ask, the students what do you know about different parts of your body?
- What are external parts that make up your body?
- What are internal parts or organs of the body? Can you name some?

Activity

- Then distribute the worksheet and ask them to carefully look at different organs and try to label.

Follow-up discussion

Invite the students to share what they have labeled?

Discuss each organ and try to find its function.

Explanation

- Explain all these organs work in collaboration with each other.
- These organs join together and make up different systems in the body.
- Nose, mouth and Lungs make up the respiratory or breathing system
- All the bones in our body make up the skeletal system.
- Heart and blood vessels make up the circulatory system.
- All the muscles make up muscular system.
- Mouth, stomach, large and small intestine make up your digestive system

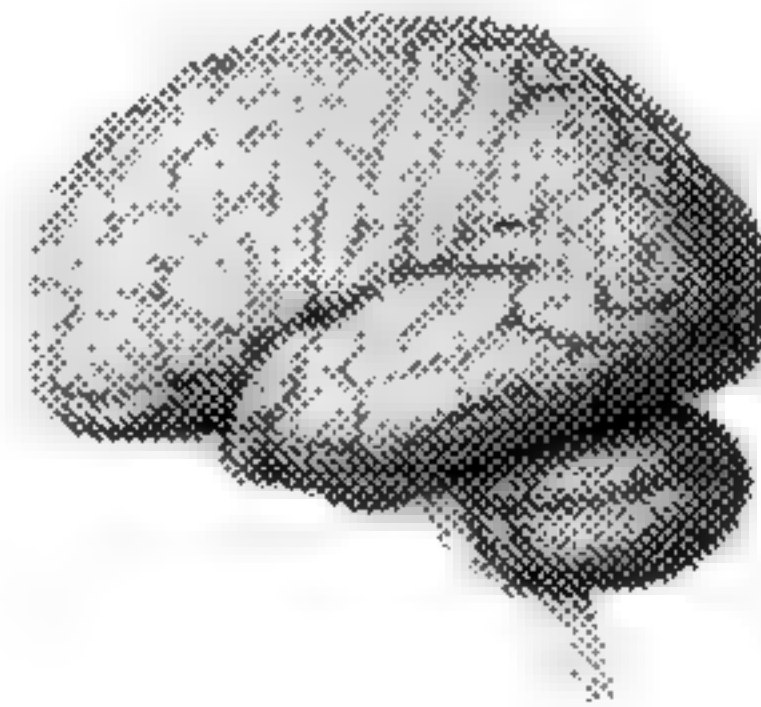
- Brain and nerves make up the nervous system.

Wrap-up Q/A

- How many systems are there in the body? What are these systems?

Level: 5 Term: 1
Week: 2 Day: 1

Body parts worksheet

What parts of the body do you see in these pictures?

Level 5	Lesson plan	Life systems
Term 1		
Week 2		
Day 2		

Topic: Human organ systems

Objective: Identification of the skin as an organ

Activity: discussion/explanation, drawing

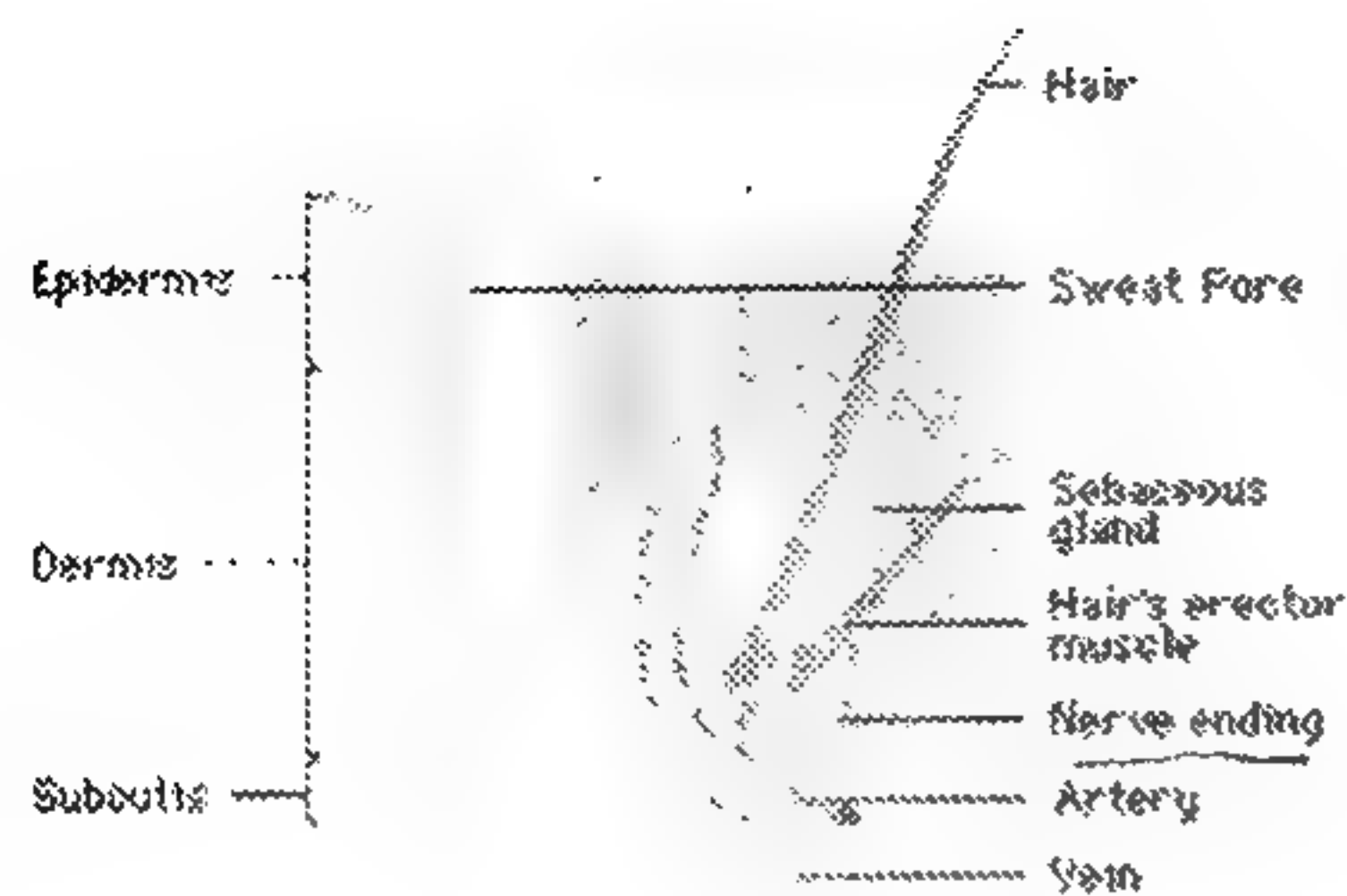
Materials: poster of layers of skin, colors, pencils, chalk

Procedure

Warm-up Q/A

- Ask the students to look at their skin.
- Ask, What does your skin look like? Does it have a color?
- Closely look at your skin? What do you see on it?
- Then touch it. How does it feel like?
- Is it soft, smooth or hard?
- Is it stretchable? Flexible?
- How do you look after your skin?
- What do you think your skin is made up of?
- Listen to their responses and tell today we would learn what is our skin.

Explanation

- Draw this diagram on the bard or get a poster.
- Then explain,
- Skin is an important organ of the body. It protects and covers all the organs, which are inside our body. Can you imagine how would you look like without skin?
- Just like all other parts of the body our skin is made up of tiny cells.
- Skin is waterproof, stretchable, comes in a range of thick nesses and colors, and is self-repairing and easy to look after.

- We only see the top layer, the **epidermis,** which is always renewing itself.
- Old skin falls off in tiny flakes that we don't notice.
- In the next layer down, the **dermis**, sweat glands produce a liquid that comes to the surface and evaporates to keep us cool.
- There are nerve endings in this layer, which tell our brains what something we're touching feels like or if we're being hurt.
- Skin needs to be kept clean.
- Washing all over with soap and water every day helps make sure that pores don't get blocked and cause spots.
- **Melanin** is what gives skin its color and also protects it from the sun.
- People with dark skin have lots of **melanin** and their skin is better protected.
- Every part of the body, except the soles of the feet, palms of the hands and lips, grows hair
- This is completely normal and most of the hairs are too tiny to see.

Activity: Written work

Draw and label diagram of layers of skin.

Wrap-up Q/A

Why is skin important?

Level 5	Lesson plan	Life systems
Term 1		
Week 2		
Day 3		

Topic: Human organ systems

Objective: Identification of the skin as an organ

Activity: written work

Materials: copy of the worksheet fro each child, colors, pencils, chalk

Procedure

Warm-up Q/A

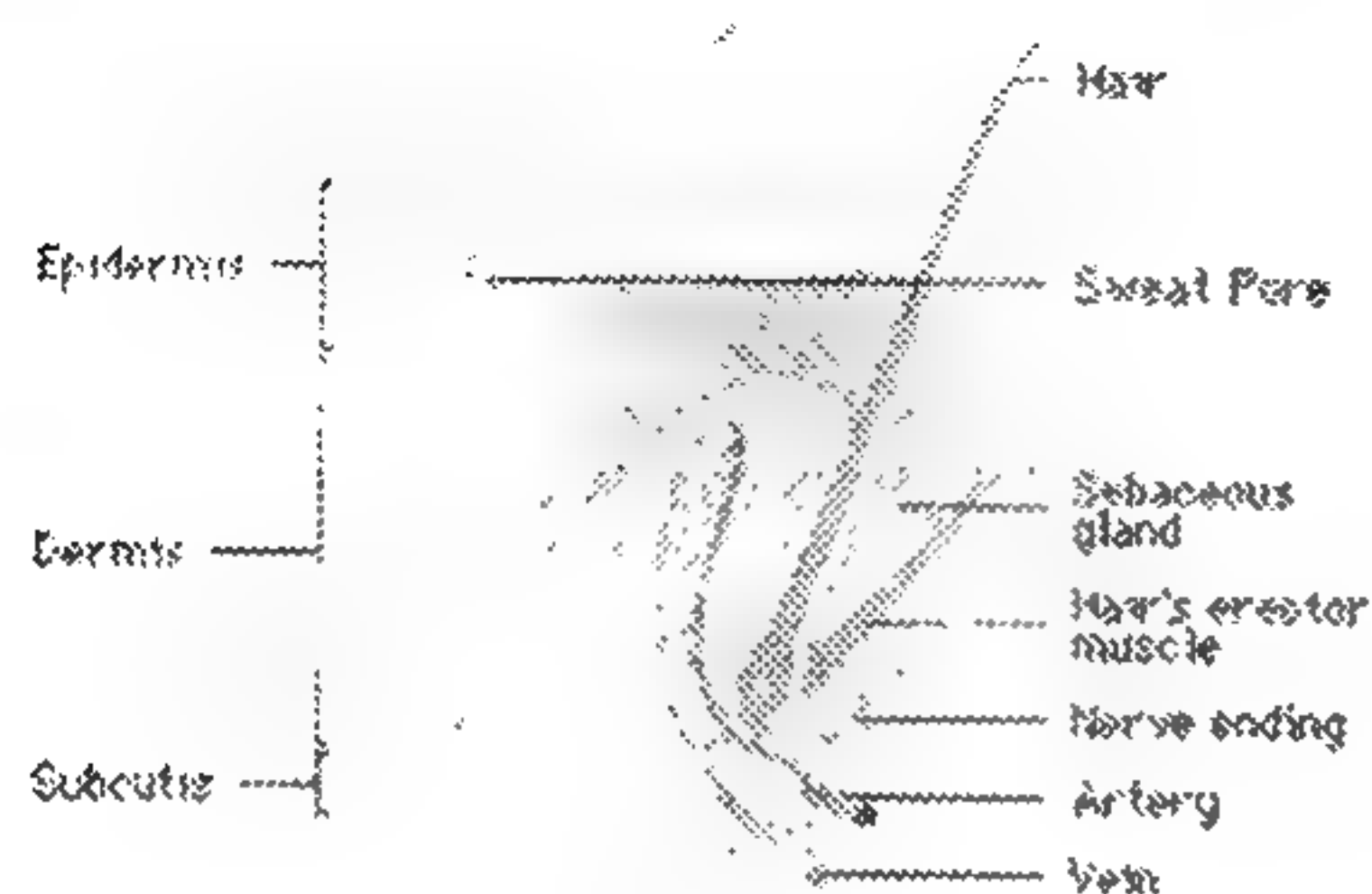
- Revise the concept introduced in the previous lesson.
- Distribute the worksheet and explain the task.

H.W Revise the work done in class.

Level: 5 Term: 1
Week: 2 Day: 3

Skin

Worksheet

Q 1) Look at this diagram and answer the given questions.

1) What is the top layer of skin called?

____

____

2)What is the second layer of skin called?

____

____

3)What are the holes in skin called? What is their function?

____

____

____

____

What helps us to feel or sense when we touch something?

____

____

____

____

Q II) Choose the correct answer.

Which chemical gives color to your skin is

- Melanin
- Chlorophyll

Our skin is

- Water proof
- Not water proof

We should protect our skin from

- Sun
- Air

What happens to the old skin?

- It falls off
- Stays forever

In which layer are the nerve endings?

- Epidermis
- Dermis

QIII) Why do you think is skin important?

____

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Level 5	Lesson plan	Life systems
Term 1		
Week 2		
Day 4		

Topic: Human organ systems

Objective: To understand the function of muscular system

Activity: Explanation, written work

Materials: Copy of the work sheet for each child, pencils and chalk

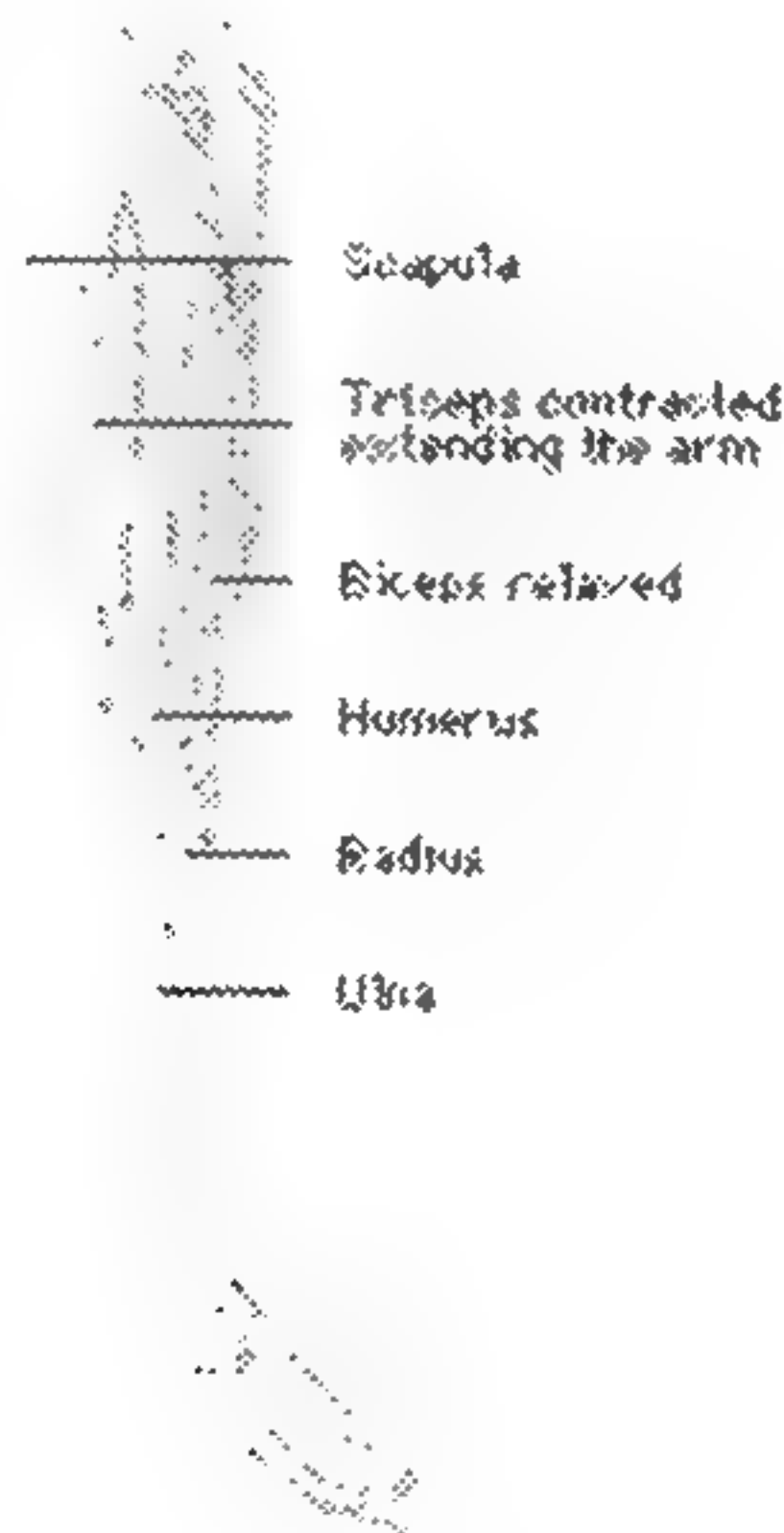
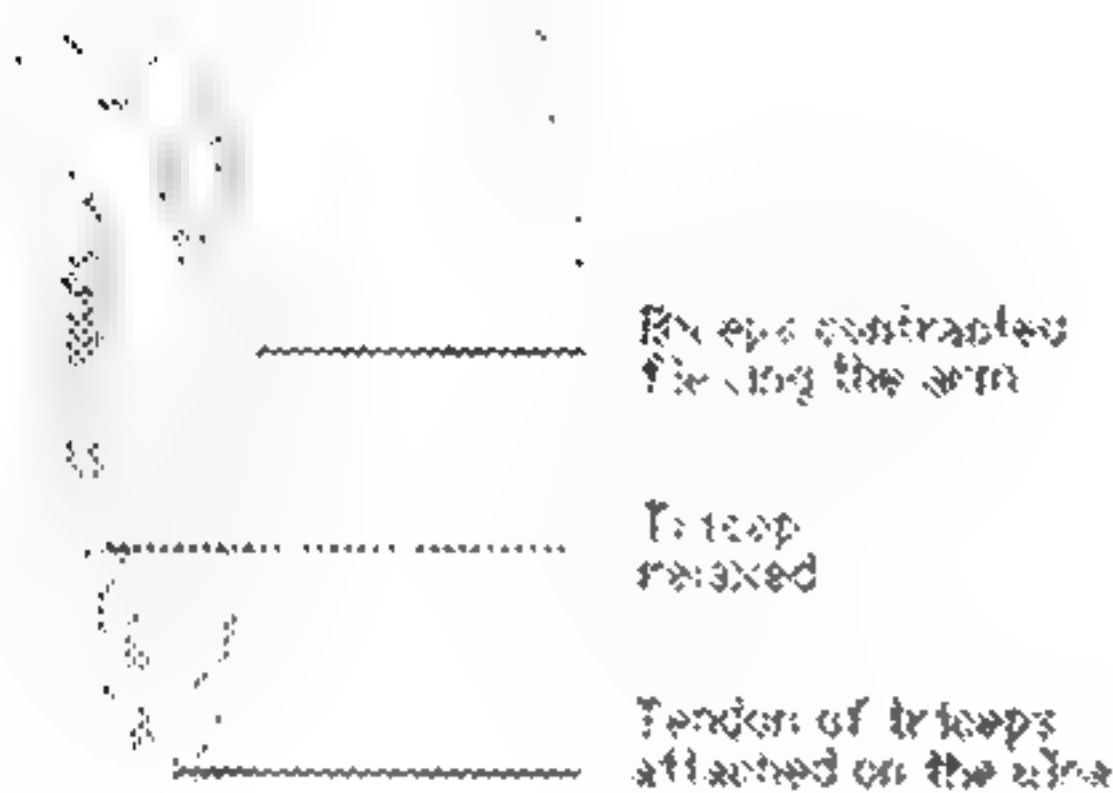
Procedure

Warm-up Q/A

- Ask the students to try to stay still for a minute?
- Ask, were you able to stay still?
- Then tell, however hard you try to keep completely still, you'll never be able to do it. Your eyelid may be quivering and your heart will always be beating.
- Do you know what helps or make you move?
- Listen to their responses then tell.
- Your muscles are what allow you to move, from sticking out your tongue to doing the high jump.
- Today we will discuss the muscular system.
- Ask, can you name some muscles in your body?
- List their responses on the board and explain.

Explanation

- Explain
  Everyone has over 600 of them. Even the strongest body builder doesn't have any more than you!
- Explain, Almost half the body's weight is muscle. Muscles are the part of our body that allows us to move.
- They are made up of special tissues that can contract, or shorten, when they receive a signal from the brain.
- The muscles are **attached to bones** by stretchy tissue called **tendons.**

- When the muscles contract, they pull on the tendons, which pull on the bones and cause our limbs to move.
- Muscles can get shorter and pull, but they cannot push.
- So most muscles are arranged in opposing teams.
- One team pulls the body part one way, then the other team pulls it back again.
- As each team pulls, the other team relaxes and gets stretched.
- Ask the students to flex the arm and then stretch their arms
- Show them the poster or draw these diagrams on the board.

- For example the muscles in your arms are arranged in opposing teams.
- Muscles in front are called **biceps** and the ones at the back of the arm are called **triceps.** When you flex biceps triceps stretch and vice versa.
- One team pulls the body part one way, then the other team pulls it back again.
- As each team pulls, the other team relaxes and gets stretched.
-

  All this muscle action is controlled by your brain, which sends and receives signals through your nervous system.
- When your brain sends the signal for them to go into action, in a fraction of a second you're on the move.

- There are two types of muscles. Those which can work on their own are called **involuntary** muscles such as lungs, heart, stomach etc.. The Most important involuntary Muscle has got to be the heart, keeping blood pumping round your body night and day.
- **Voluntary** muscles, such as your arms and legs can be controlled by your thoughts

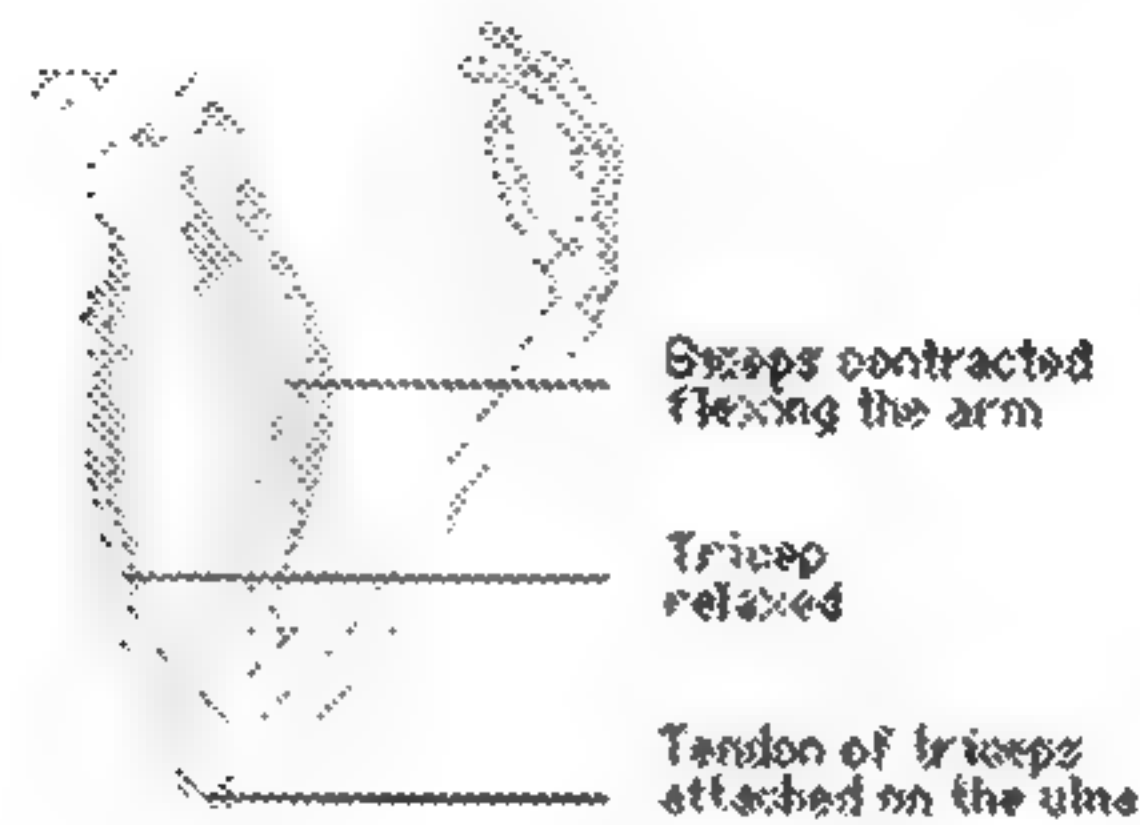
Wrap-up Q/A

- What makes you move?
- How many muscles are there in your body?

Level : 5 Term : 1
Week : 2 Day : 4

Muscular System

Worksheet

Look at the pictures and answer the given questions.

What are the muscles in front of the arm called?

____

What are the muscles in back of the arm called?

____

What happens to the front muscles when you fold your arm?

____
____
____
____

What happens to the muscles at the back of the arm when you fold your arm?

____
____
____
____

What type of muscle is your heart?

____

Level 5	Assessment	Life systems
Term 1		
Week 2		
Day 5		

Note: use the worksheets and questions given with each lesson

Science Lesson Plans

Level 5
Term 1

Week 3

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
3	Life Systems	Human organ Systems	1	To understand the function of skeletal system in the body	H.W
3		do	2	To identify major bones in the body and understand their function	H.W
3		do	3	To understand how skeletal and muscular systems work together	H.W
3			4	To identify parts and understand the function of blood	
3		do	5	Assessment	

Level 5	Lesson plan	Life systems
Term 1		
Week 3		
Day 1		

Topic: Human organ systems

Objective: to understand the function of skeletal system in the human body.

Activity:
Materials: skeleton model, or poster of a human skeleton,
Skeleton handouts for activity, large white paper sheets or old news papers, markers
Procedure:

- **Warm up Q/A**
  Show your students a model of the skeleton and ask what is it?
- Then tell the students to feel their bones in arms, jaw, fingers etc
- Ask, What is the purpose of skeleton in the body?
- Then tell,
- It not only gives our body shape and support, but it also protects our insides.
- Today, we will be learning about our skeleton. (Show model)

Explanation:
Show model of the human skeleton or the poster.

- Ask,
- What would we look like without bones?
- How would we move if we didn't have bones?
- What would happen if we got hit in the head with a ball and we did not have a skull?
- Explain by pointing to the bones on the skeleton model.
- Bones give support to the body by providing a firm surface for muscles to attach to
  Bones protect the inner organs such as brain, lungs, heart etc.
- Bones help us to move
- Ask students which bones help them move.
- Begin with how the legs help us walk.
- Then tell about more complex activities such as hitting a ball or swimming
- Starting at the skull, point to and name different major bones in the body. Tell what their function is.
- Major bones and their job

- **Skull:** Protects the brain, eyes, ears, and nose
- **Spine:** helps to keep you upright (straight)
- **Rib Cage:** protects heart, lungs, and other internal organs
- **Bones in the:** Arms (upper arm, lower arm)
- **Legs** (upper leg, lower leg) Hands/ fingers, Feet/fingers
- **Help you to move and work.**

Activity: 2

Distribute the work sheet and explain the task.

Wrap up Q/A

- What are the major bones in the body?
- What job do the bones do?

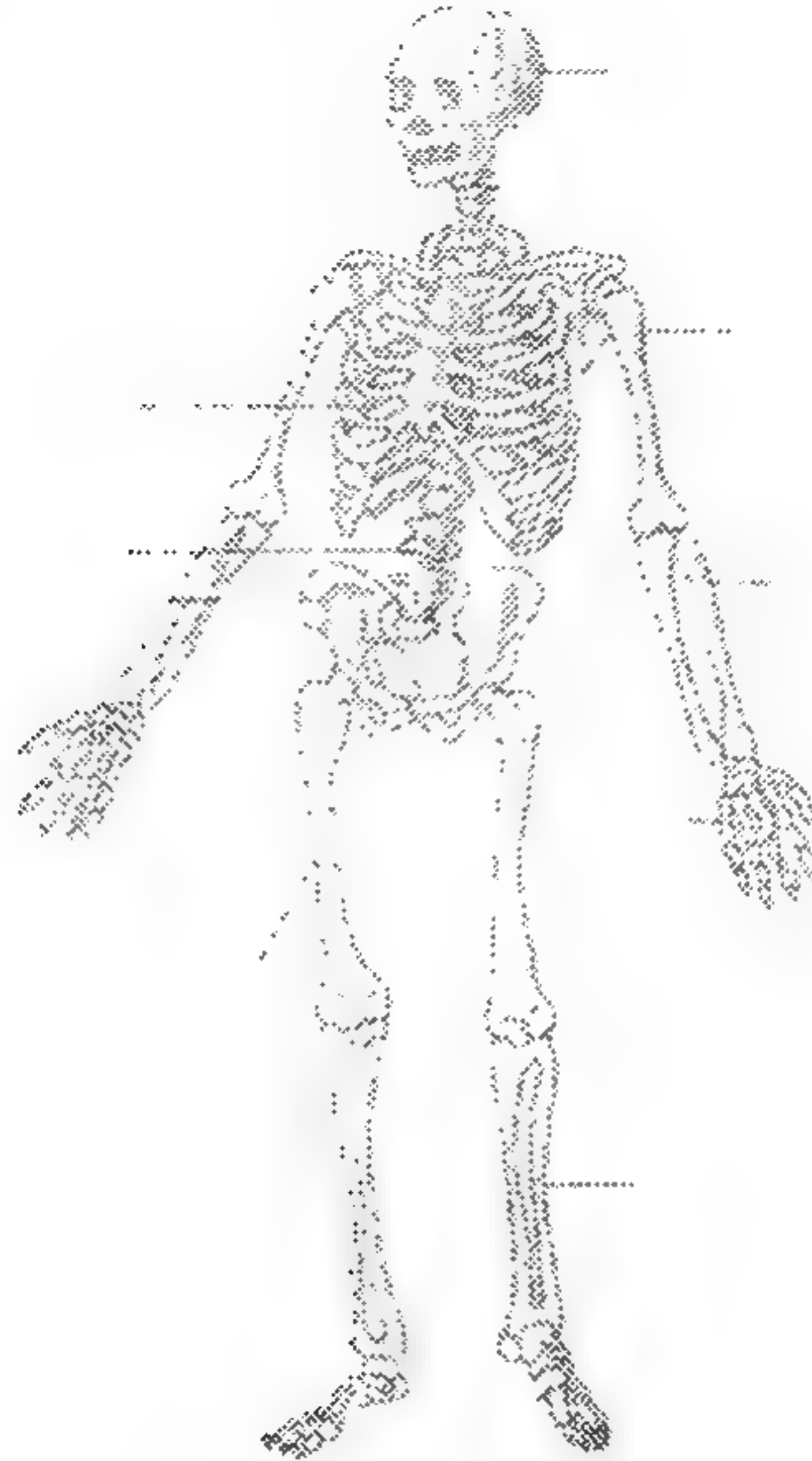
H.W Learn the names and spellings of major bones in the body

Level: 5 Term: 1

Week: 3 Day: 1

Skeleton
Worksheet

I- Label the major bones. Choose words from the given list.

(Skull, Ribs. Leg bones, Arm bones, Spine)

II- Match the bones with their job (purpose) by drawing lines. a- Skull

i- keeps the body straight

b- Legs **ii-protects the brain**

c-Ribs **iii-help to move**

d-Spine **iv- protects lungs and heart**

Level 5	Lesson plan	Life systems
Term 1		
Week 3		
Day 2		

Topic: Human organ systems

Objective: The students will be able to locate the major bones of the body and understand the function of the skeletal system

Activity: Drawing and labeling

Materials:

Copy of the worksheet for each child
3-D model of a human skeleton

Procedure:

Warm-up Q/A

- Using questions, guide students to reach conclusions about the functions of bones: support, structure, mobility, and protection of internal organs.
- Ask, What would we look like without bones?
- How would we move if we didn't have bones?
- What would happen if we got hit in the head with a ball and we didn't have a skull?
- Further the questions by asking about individual bones and pointing to these bones on the skeleton model.

Explanation

Show the skeleton model and explain.

a. Bones as Protectors:

- Begin at the top with the skull and work your way down including the vertebrae, sternum, ribs, and pelvis.
- Ask students what each bone or set of bones does.
- Help them understand that they protect the brain, central nervous system, heart, lungs, and lower quadrant internal organs.

b. Bones and Mobility:

- Ask students which bones help them move.
- Begin with how the legs help us walk
- Then move on to more complex activities such as hitting a ball or swimming.

:. Bones and structure:

Bones give shape and provide structure to our body.

Our bones are amazingly strong, so they can support our body weight, but light enough to allow us to move. Living bone may appear hard but is actually wet - one third of it is water.

Then explain there are 206 bones in the body

- Skull and upper jaw 21 bones
- 3 tiny bones in each ear
- Lower jaw (mandible)
- Front neck bone (hyoid)
- Backbone or spine (26 separate bones or vertebrae)
- Ribs (12 pairs – same number for men and women)
- Breastbone
- Each upper limb has 32 bones: 2 in shoulder, 3 in arm, 8 in wrist, 19 in hand and fingers
- Each lower limb has 31 bones: 1 in hip (one side of pelvis), 4 in leg, 7 in ankle, 19 in foot and toes

Total = 206 bones

Activity: written work

Distribute the worksheet and explain the task.

Wrap-up Q/A

What three major jobs skeletal system performs?

Level: 5 Term: 1
Week: 3 Day: 2

Skeletal System

Worksheet

Name these bones and describe how they either give the body structure, mobility, or protection

____

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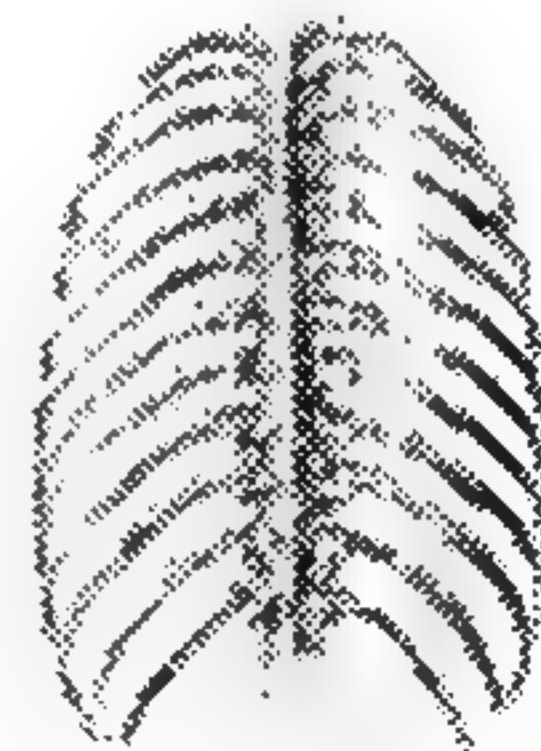

How Many Bones?

Read the given information and answer the questions.

- Skull and upper jaw 21 bones
- 3 tiny bones in each ear
- Lower jaw
- Front neck bone
- Backbone or spine (26 separate bones or vertebrae)
- Ribs (12 pairs - same number for men and women)
- Breastbone
- Each upper limb has 32 bones: 2 in shoulder, 3 in arm, 8 in wrist, 19 in hand and fingers.
- Each lower limb has 31 bones: 1 in hip (one side of pelvis), 4 in leg, 7 in ankle, 19 in foot and toes.

1) How many bones are there in our body?

____

2) How many bones are there in an ear?

____

3) How many pairs of bones are in your ribs?

____

4) How many vertebras are there in your backbone?

____

5) Complete the sentences.

There are ______________ bones in each upper limb.

There are ______________ bones in lower limb.

There are ______________ bones in hands and fingers.

There are ______________ bones in foot and toes.

Level 5	Lesson plan	Life systems
Term 1		
Week 3		
Day 3		

Topic: Human organ systems

Objective: to understand how skeletal and muscular systems work together in the human body

Activity: Making a cutout model
Materials: skeleton model, or poster of a human skeleton,
Skeleton handouts for activity, large white paper sheets or old news papers,
markers
Procedure:
Warm up Q/A

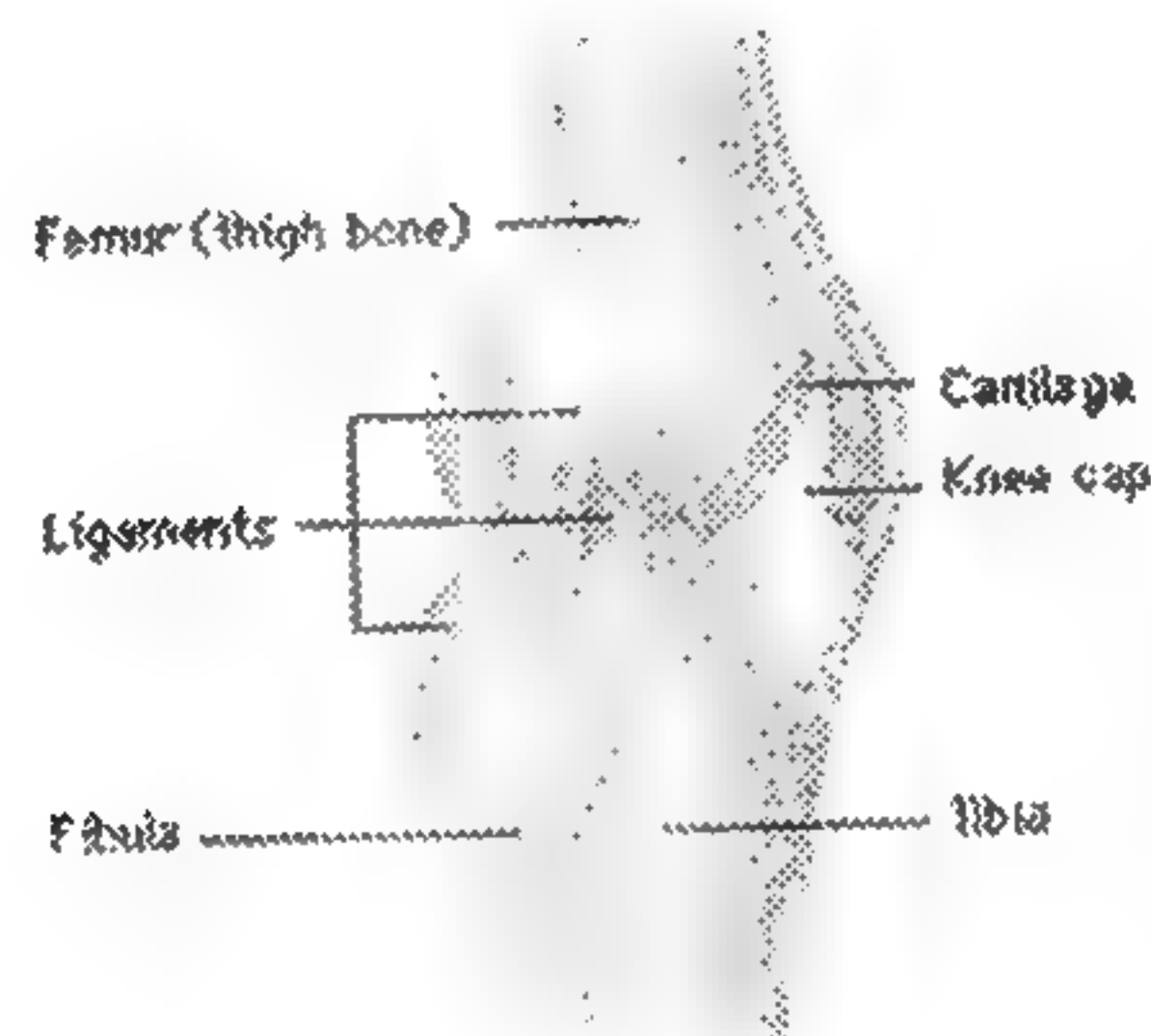
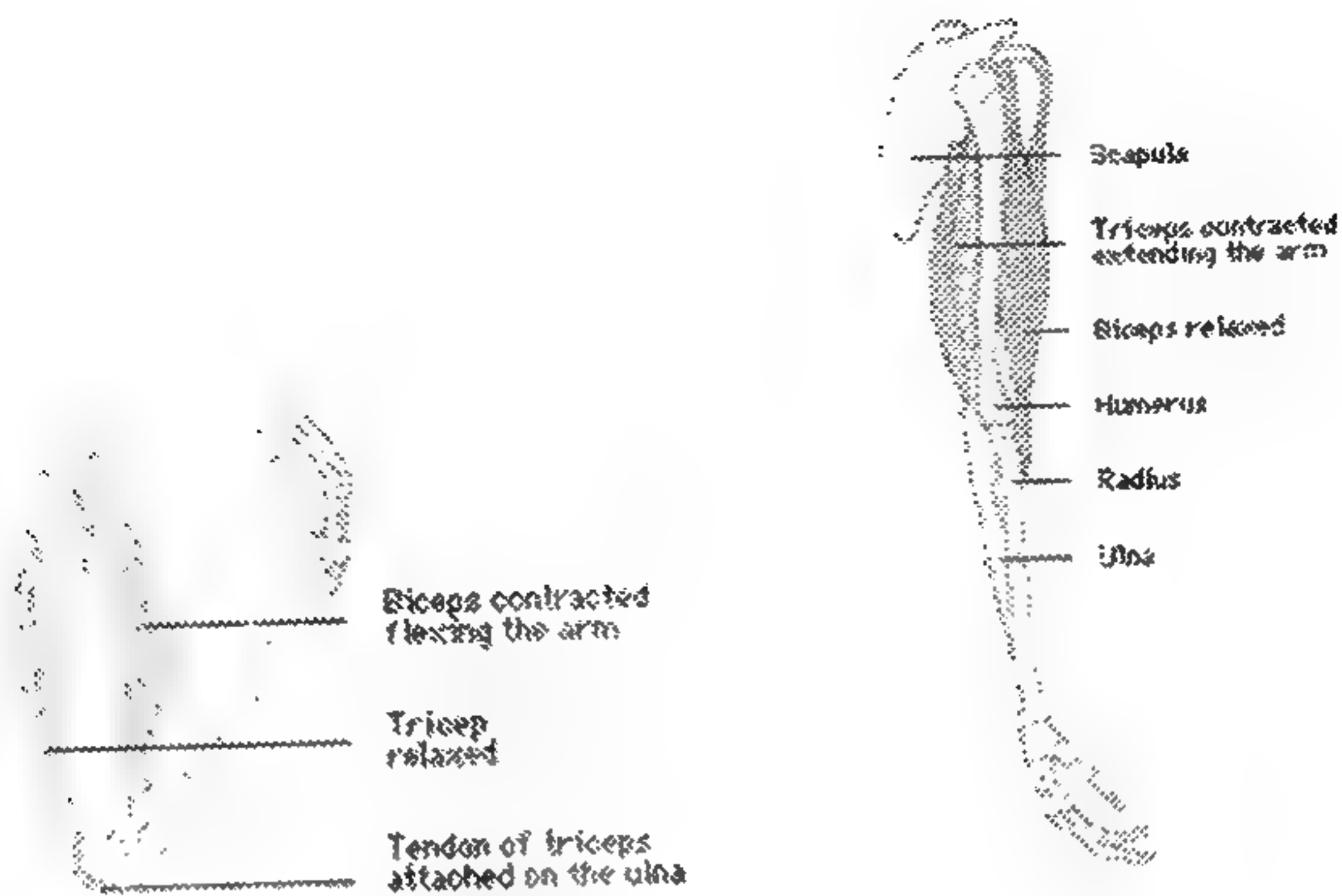
- Ask, what do you know about the skeletal system?
- What are the major bones?
- What is the function of bones?
- Listen to their responses then ask,
- How do these bones move?
- Remind them about the muscular system.
- Then tell our bones are able to move due to muscles.

Explanation

- Show them the model of skeleton and explain,
- The Skeleton is the name given to the collection of bones that holds the rest of our body up. Our skeleton is very important to us. It does three major jobs.

1. It protects our vital organs such as the brain, the heart and the lungs.
2. It gives us the shape that we have
3. It allows us to move. Because our muscles are attached to our bones, when our muscles move, they move the bones, and we move.

- Draw this drawing or show a poster and explain.

- Distribute the worksheet with pictures to students.

- Our bones don't simply work on their own.
- The bones join together to form **joints.**
- Muscles are attached to the bones by **tendons.**
- A tough, smooth shiny substance called **cartilage** covers the end of each bone.
- Strong stretchy bands called **ligaments** hold our bones together.

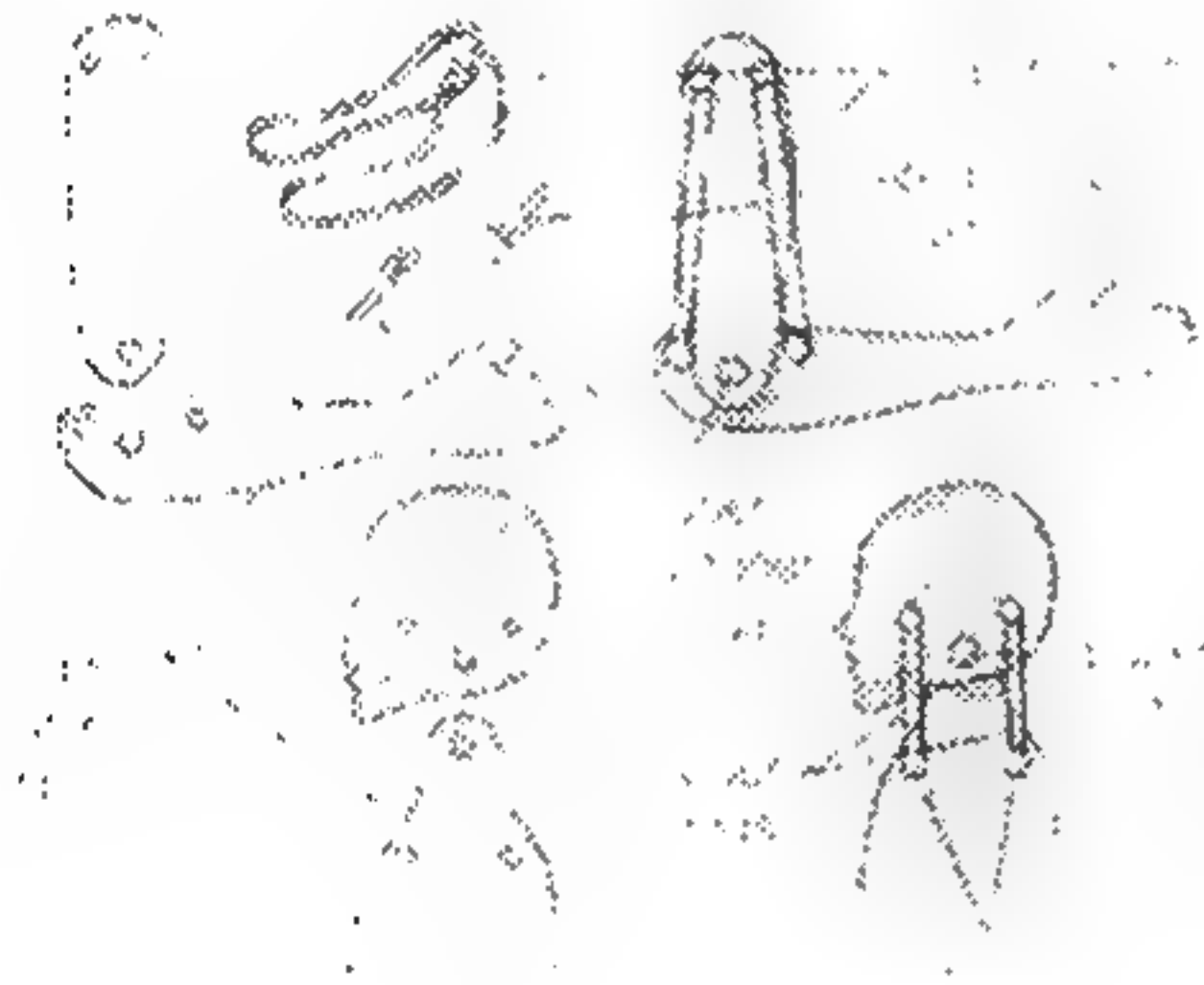
- Muscles are attached to the bones by tendons.

- Muscles stretch and flex and then help our bone to move.
- For example,
- The muscles in your arms make the arm move as they are attached to the bones.
- Muscles stretch and flex and then help our bones to move.

Activity

- Divide the students into groups.
- Explain them to make a model of bone and muscle movement. Follow the instruction sheet.
- Use stiff card paper to make model of the arm and skull. The rubber bands represent the muscles.
- Notice how they work in pairs.
- Raise and lower the hand on the model arm by pulling on the rubber bands one at a time
- See which muscle raises the arm and which lowers it.
- Check your own muscles to see if you were right.

  - Now make your model head nod backwards and forwards. Which muscle pulls the head down and which pulls it back.

muscles. Notice that they work in pairs.

Follow-up discussion

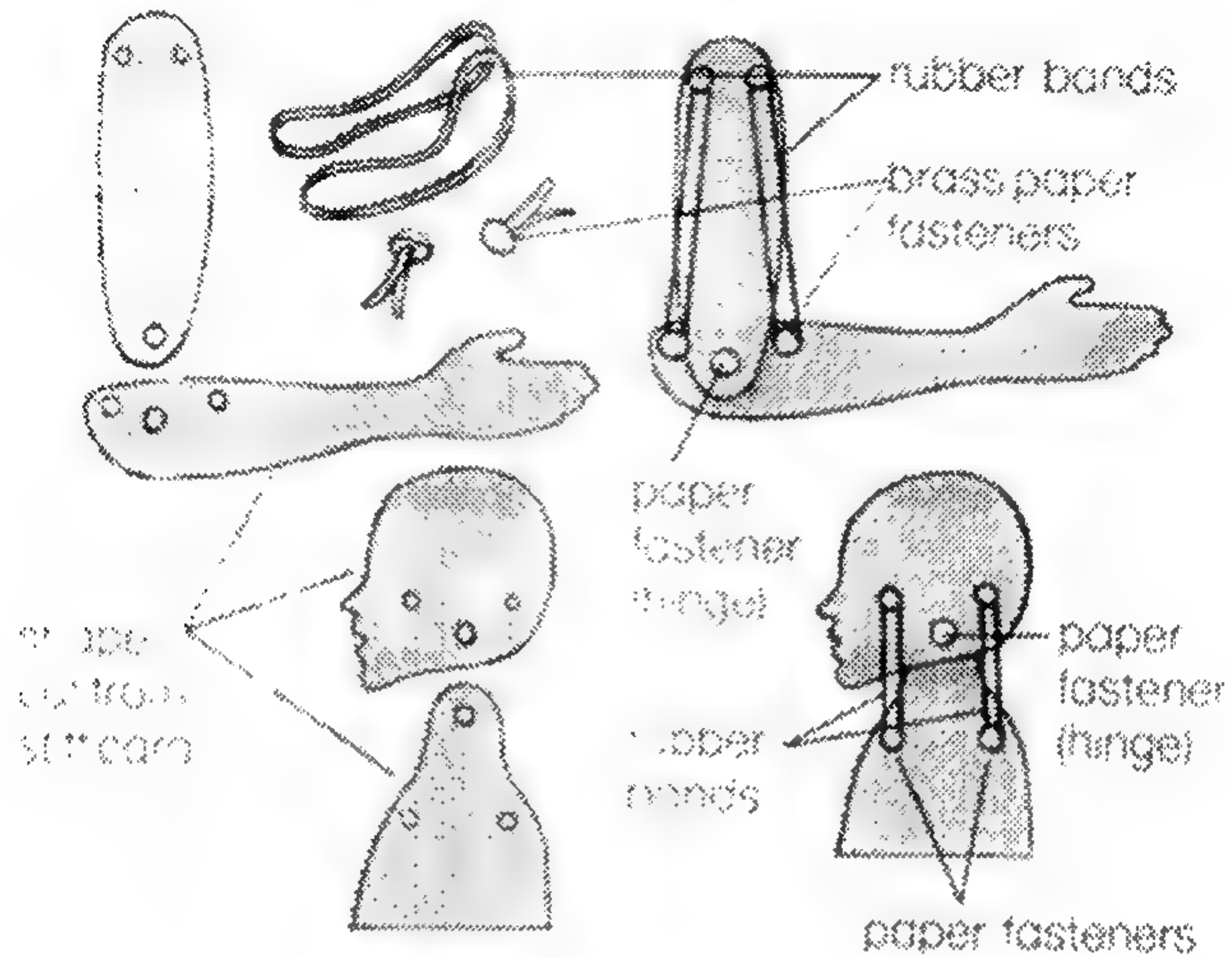
- Invite the students to show their cardboard models.
- Ask, what did you learn from this activity?
- Can bones move without muscles?
- Can muscles move without bones?
- How do bones and muscles move together?

Wrap-up Q/A

What helps us to move?

Level: 5 Term: 1
Week: 3 Day: 3

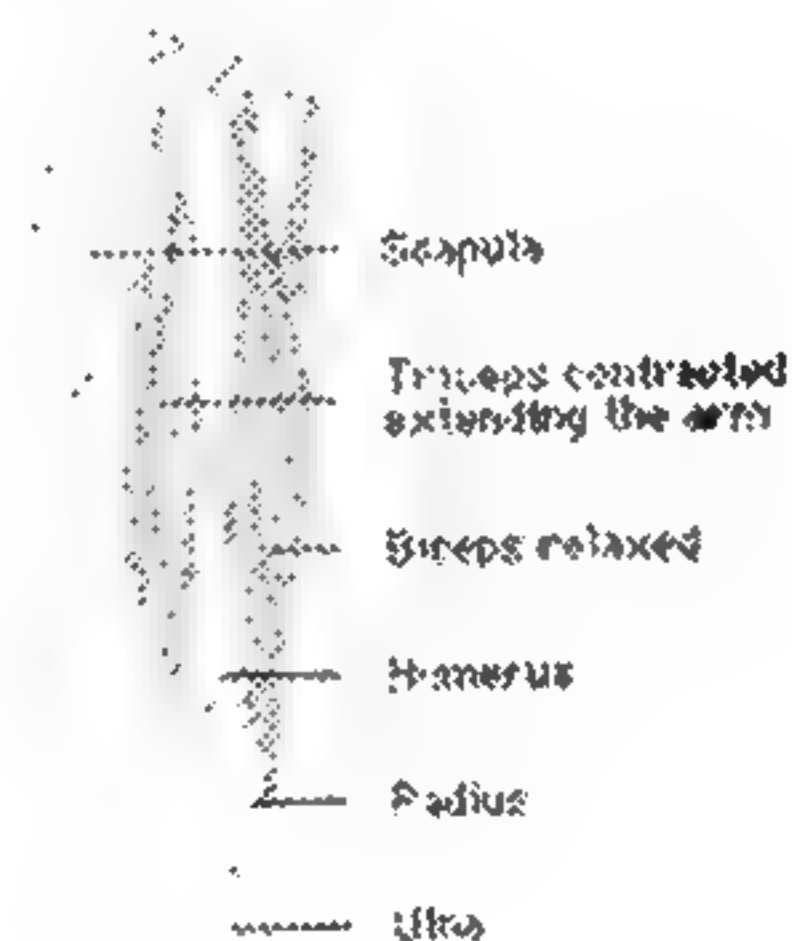
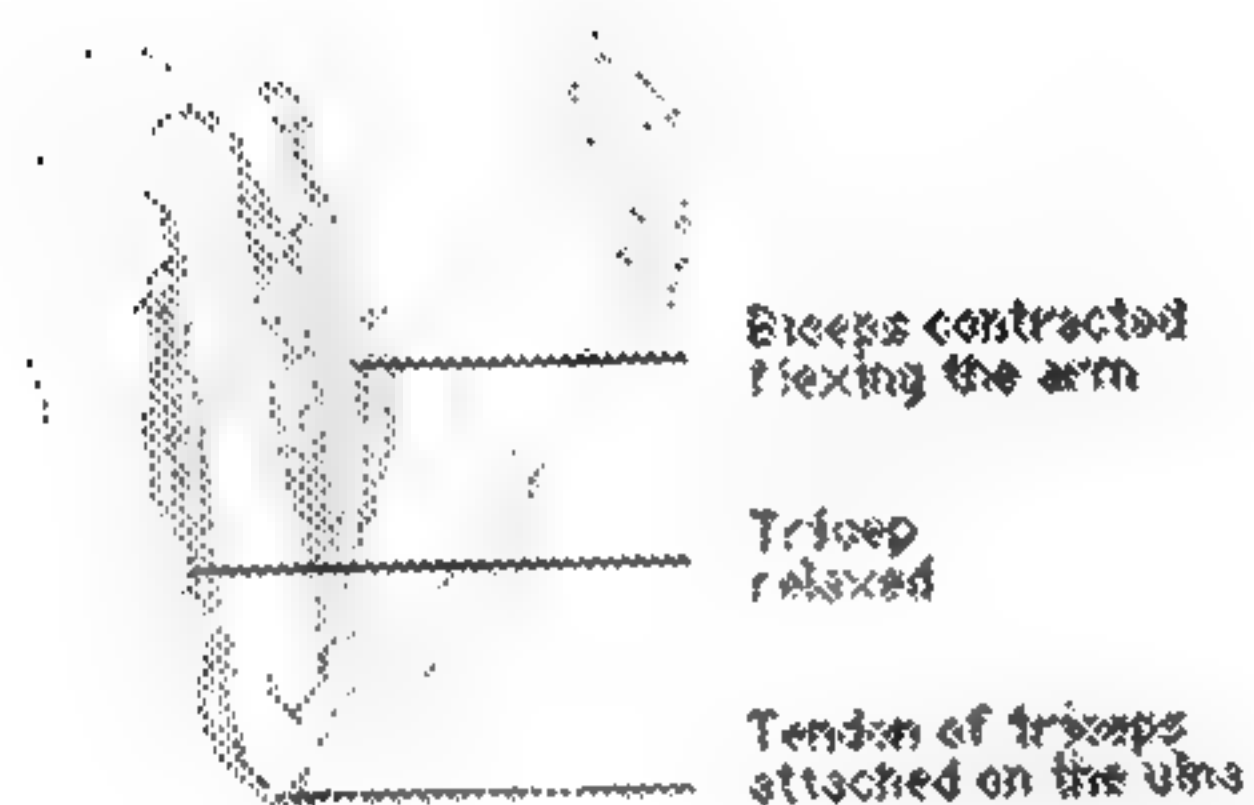
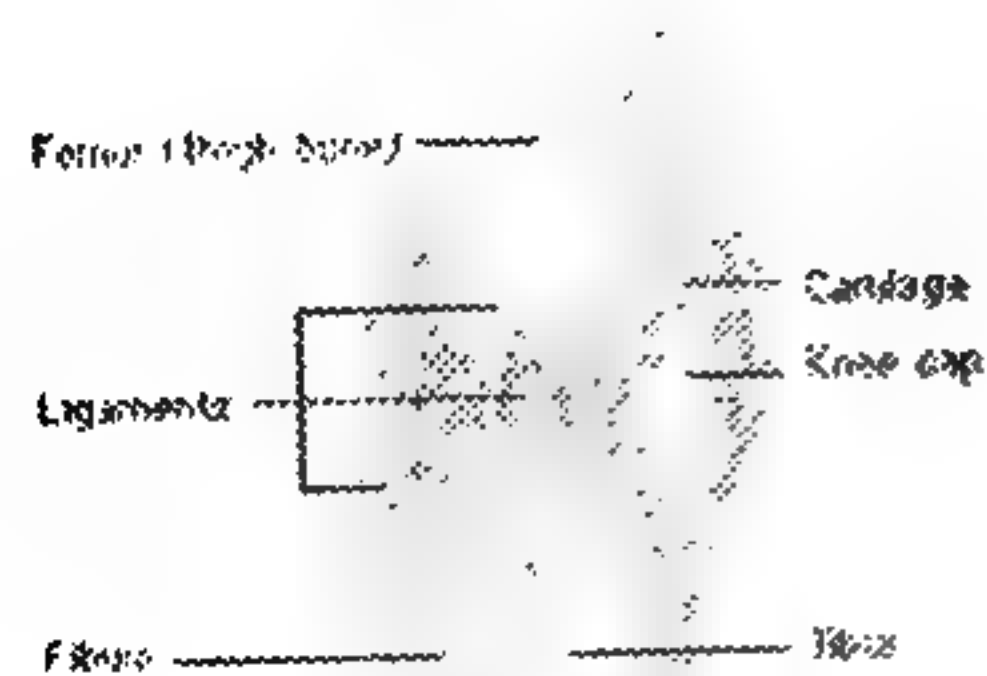
Making a Muscles bone cutout instruction sheet

muscles. Notice that they work in pairs.

Level: 5 Term: 1

Week: 3 Day: 3

How bones and muscles work together

Worksheet

Bones and muscles in arm.

Leg joint

Level 5	Lesson plan	Life systems
Term 1		
Week 3		
Day 4		

Topic: Human organ systems

Objective: to identify parts and understand the function of blood

Activity: Drawing and written work

Materials: Copy of the worksheet for each child

Procedure:

Warm up Q/A

- Ask, what is the red liquid moving in your body called? (Blood)
- Hold up your hand and ask can you see it now? (No)
- When o you see the blood? (When receive a cut or injury)
- Do you know what is blood made up of?
- Does it have any job to perform?
- Listen to their responses and then ask today we will try to find answers to these questions.

Explanation

You usually only see your blood when you cut yourself but it's really fascinating stuff

- It's on the move all the time, traveling through your body in a huge network of pipes called veins and arteries.
- Blood contains three different kinds of cells floating in a liquid called **plasma.**
- The **red cells,** which give blood its color, carry oxygen around the body.
- **White cells** have a different job. They attack germs that are trying to make you ill
- They also make weapons called antibodies. If you're attacked by a virus such as 'flu or chicken pox, a special antibody strike-force is called to deal with it.
- The third type of cells are small and sticky and called **platelets.**
- If you cut yourself, they rush towards the hole and seal it off with a scab.
- This prevents germs from getting in, but also stops your precious red stuff from leaking out.
- When you're healthy and well, blood needs hardly any maintenance, but do keep any cuts and grazes clean until the platelets have done their work.

Activity: written work

Distribute the worksheet and explain the task.

Wrap-up Q/A

What is blood made up of?

Level : 5
Term : 1
Week : 3
Day : 4

Blood

Worksheet

Q 1) What is blood made up of?

____

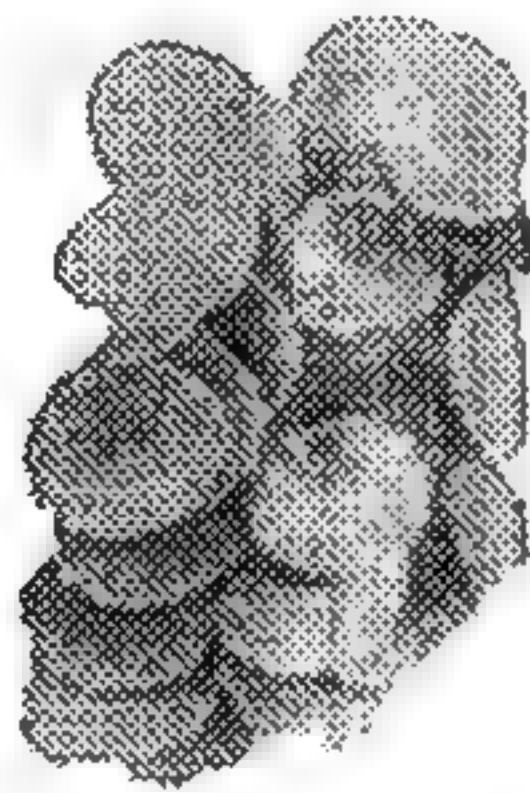
____

____

____

____

____

2) If you observe the blood cells under the microscope they look like this.

White blood cells Red blood cells Platelets

Draw these cells here.

Level 5	Assessment	Life systems
Term 1		
Week 3		
Day 5		

Note: use the worksheets and questions given with the lessons

Science Lesson Plans

Level 5
Term 1

Week 4

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
4	Life Systems	Human organ Systems	1	To identify parts and understand the function of blood	H.W
4		do	2	To understand the function of respiratory system in human body	H.W
4		do	3	To understand the function of respiratory system in human body	H.W
4			4	To measure the rate of respiration before and after the exercise	
4		do	5	Project making a model of Lungs	
			6	Assessment	

Level 5	Lesson plan	Life systems
Term 1		
Week 4		
Day 1		

Topic: Human organ systems

Objective: to identify parts and understand the function of blood

Activity: Drawing and written work

Materials: Copy of the worksheet for each child

Procedure:

Warm up Q/A

- Ask, What is blood made up of?
- Listen to their responses
- Then explain and revise the function of each part of the blood.

Explanation

Blood is very important for life All the food we eat and the oxygen we breathe reaches to all parts of the body with the help of blood.

Different parts of the blood play their important roles.

Plasma

- It's a straw-colored, clear liquid that is 90 percent water, and it is an essential ingredient for human survival
- Besides water. plasma also contains dissolved salts and minerals like calcium, sodium, magnesium, and potassium.
- Plasma is an important part of your blood as all the blood cells float in it. You blood is a liquid due to plasma.

Red blood cells

- Red blood cells perform the most important blood duty.
- A single drop of blood contains millions of red blood cells, which are constantly traveling through your body delivering oxygen and removing waste.
- If they weren't your body would slowly die.

- Red blood cells are red only because they contain protein chemical called hemoglobin, which is bright red in color.

White Cells

- Whenever a germ or infection enters the body, the white blood cells attack it.
- The white blood cells are continually on the lookout for signs of disease.
- When a germ does appear, the white blood cells have a variety of ways by which they can attack
- Some will produce protective antibodies that will overpower the germ.
- Others will surround and eat the bacteria.

Platelets

- Platelets are irregularly shaped, colorless bodies that are present in blood.
- Their sticky surface lets them, along with other substances, form clots to stop bleeding
- When bleeding from a wound suddenly occurs, the platelets gather at the wound and attempt to block the blood flow.
- Platelets make the blood outside the body not inside the body.

Activity: written work

Distribute the worksheet and explain the task

Wrap-up Q/A

Why do you think blood is important? Can we survive without blood?

H.W revise the work done in class

Level: 5
Term: 1
Week: 4
Day: 1

Function of blood

Worksheet

What is plasma? What is it made up of?

____
____
____
____

What is the function of red blood cells? What gives red color to the red blood cells?

____
____
____
____
____

What is the function of white blood cell?

____
____
____
____
____

What job is done by platelets?

____

____

____

Why is blood important for life?

____

____

____

____

____

Choose the correct answer

Plasma contains

a) 90 percent water

b) 50 percent water

Red blood cells are

a) Round in shape

b) Square in shape

Platelets help the blood to clot

a) Inside the body

b) Outside the body

Level 5	Lesson plan	Life systems
Term 1		
Week 4		
Day 2		

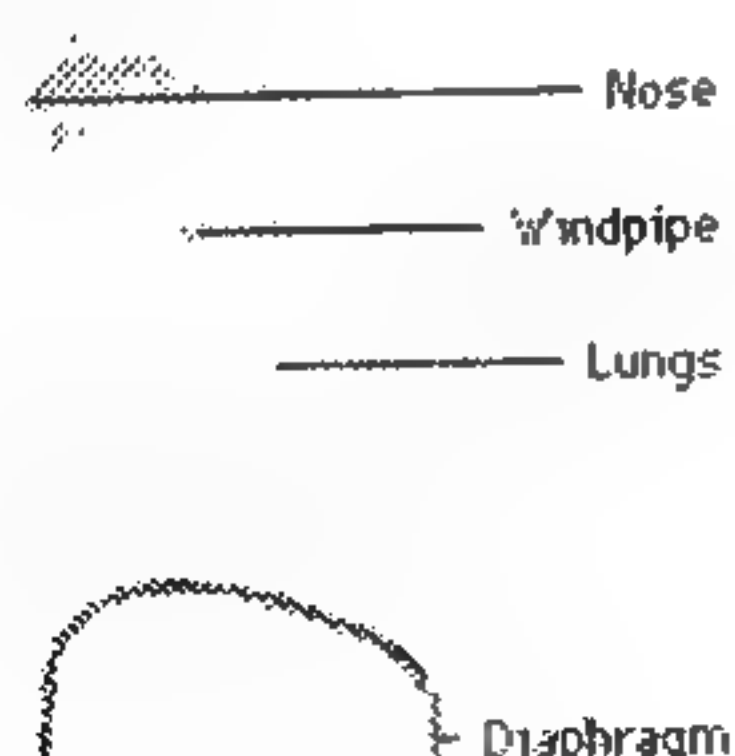
Topic: Human organ systems

Objective: to understand the function of respiratory system in human body.

Activity: explanation, written work
Materials: Copy of the worksheet for each child, poster, chalk, pencils
Procedure:
Warm up Q/A

- Tell the students to put their hands on their chest.
- Then ask, what do you notice?
- Do your chest rises and falls? (The chest rises and falls when we breathe)
- Why does this happen? (The lungs inflate when you inhale. When you exhale the lungs deflate).
- Can we live without air?
- Then ask what makes up your respiratory or breathing system?

Explanation

Draw this diagram on the chalkboard or show a poster and explain.

- Breathing is a real body basic you can't live without it.
- The respiratory system is the system of the body that deals with breathing
- When we breathe, the body takes in the oxygen that it needs and removes the carbon dioxide that it doesn't need.
- Respiratory system is made up of, **Nose, wind pipe, lungs** and **diaphragm.**
- Air goes in through your nose or mouth.
- Breathing through your nose is best because the tiny hairs inside stop dust getting into your lungs.
- When you breathe in, air is sucked down your **windpipe** towards your lungs.
- Your lungs are like sponges, made up of lots of tiny **air sacs.**
- Inside the lung, the tubes divide into smaller and smaller tubes called **bronchioles.** At the end of each of these tubes are small air sacs called **alveoli.**
- Air sacks hold the air.
- Oxygen, from the air, passes through these air sacks into your blood. The **red blood cells** absorb the oxygen and take it to the rest of the body.
- The carbon dioxide and other gases left behind are breathed out. Our body needs oxygen.
- The **diaphragm** is the muscle that helps your lungs to work. It controls the breathing process.
- As the diaphragm flattens it causes the chest to expand and air is sucked into the lungs.
- When the diaphragm relaxes, the chest collapses and the air in the lungs is forced out.
- Mostly you breathe without thinking about it.
- The function of respiratory system is to help you breath in and out in order to get the oxygen absorbed by the blood cells, which is very important for us.

Activity

Distribute the worksheet and explain the task

Wrap-up Q/A

What is the function of respiratory system?

Level: 5

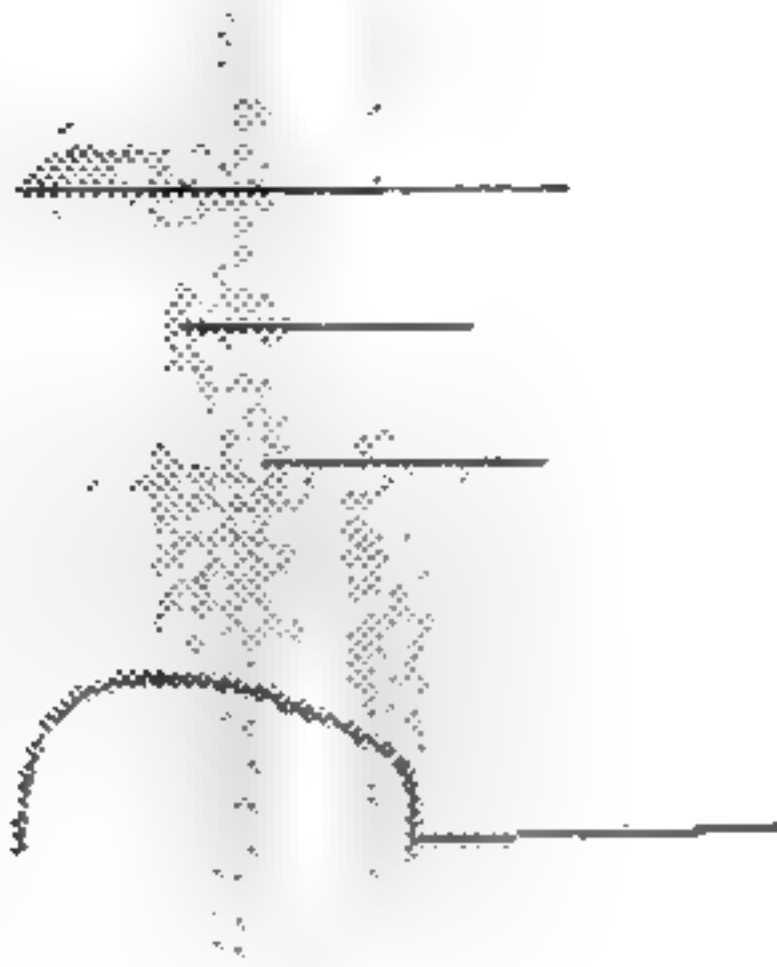
Term: 1

Week: 4

Day: 2

Respiratory system

Worksheet

Label the different parts of respiratory system.

Look at the pictures and describe what is happening.

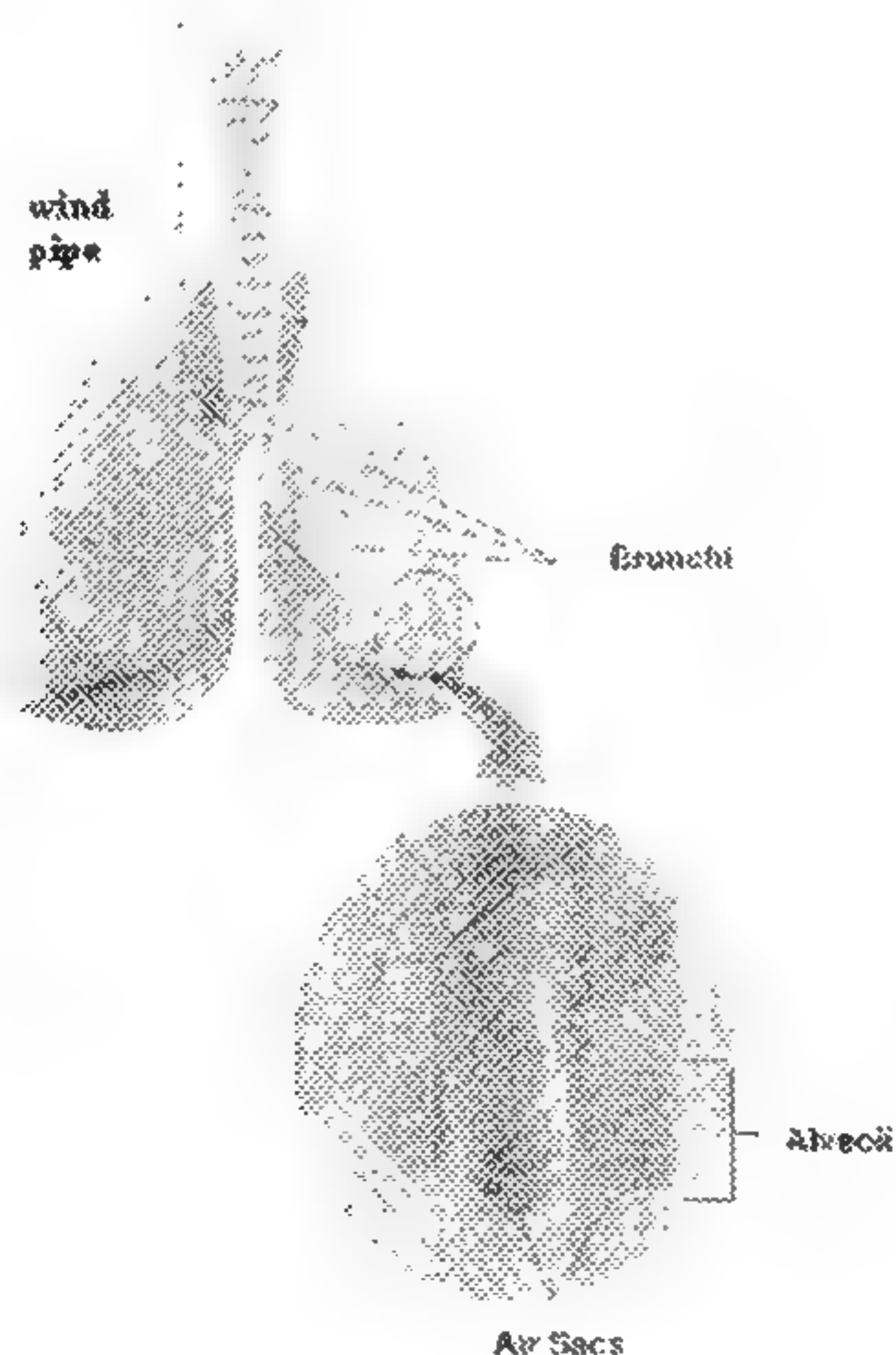
Level 5	Lesson plan	Life systems
Term		
Week		
Day		

Topic: Human organ systems

Objective: to understand the function of respiratory system in human body.

Activity: Written work
Materials: chalk, pencils, poster
Procedure:
Warm up Q/A

Ask: what have you learned about the respiratory system?
Listen to their responses and then revise the concept by explaining and discussion.
Explanation

Draw this diagram on the board and explain.

- The air enters the body through the nose and mouth, and then flows down the windpipe.
- The windpipe branches into two tubes called the bronchial tubes.
- Each tube leads to one lung.
- Inside the lungs, the bronchial tubes branch out into smaller and smaller branches- just like the branches and twigs on a tree.

- All the bronchial tubes end at the alveoli, tiny balloon like air sacs. Air travels through all of these tubes until it reaches the millions of alveoli (elastic air sacs).
- In these tiny bubble bags is where the oxygen finally leaves the lungs and enters the body through the blood stream. Then, waste (carbon dioxide) from blood vessels in your body enters your lungs.
- Distribute the worksheet and explain the task.
- This exchange can take place because there are blood vessels surrounding all the air sacs. The blood drops off it's load of waste (carbon dioxide) when you exhale and picks up the fresh load of oxygen when you inhale.
- Then the blood vessels carry the oxygen all over the rest of the body to use.

Wrap-up Q/A

What is the function of respiratory system?

H.W Revise the work done in class

Level: 5

Term : 1

Week : 4

Day : 3

Respiratory System

Worksheet

Q1) Draw and label different parts of the respiratory system.

Answer these questions

Q 2) What is the function of respiratory system?

____

Q 3) Through which part of the body air goes in?

____

Q 4) Through which part of the respiratory system air enters the lungs?

____

Q 5) Which part of your blood absorbs the oxygen?

____

Q 6) What is diaphragm? Describe its function.

____

____

____

____

____

____

____

Look at the diagram below and answer the questions.

Inside the lung, the tubes divide into smaller and smaller tubes called **bronchi**. At the end of each of these tubes are small air sacs called **alveoli.**

What are the branches or tubes inside the lungs called?

____

____

____

What is the other name for air sacks?

____

____

What is the job of air sacks?

____

____

____

Draw a pair of lungs and show air sacks and bronchi.

Level 5	Lesson plan	Life systems
Term 1		
Week 4		
Day 4		

Topic: Human organ systems

Objective: To measure the respiration rate before and after doing exercise

Activity: Measuring breathing rate
Materials: chalk, pencils, stopwatches or a clock with a second's hand, copy of worksheet for each pair

2 small squares of papers, butcher paper or chalkboard for class graph (optional)

Procedure:
Warm up Q/A

- Revise the concept introduced in the previous lesson.
- Ask students if they could close their mouths and pinch their noses shut for 5 minutes without changing position.
- Use a clock and let them try if needed.
- Why can't we do this? (We must breathe air!)
- Ask the students why and how we breathe air.
- Listen to their responses.

Activity

Divide the students into pairs.
1 Assign roles to paired-off students:

- **Breather:** All the breathers should remain sitting up straight in their chairs with hands on their chest
- **Watcher:** They must watch their partners and count the number of breaths taken in one minute. (Count one breath every time the chest rises.) The Breather should read a book to keep distracted and not alter his or her normal breathing pattern.
- The teacher cues the Watcher when to begin and when to stop after 60 seconds.
- Count one breath every time the chest rises.

2. After 60 seconds, the Watchers tell the Breathers how many breaths were counted.
3. Then, all Breathers record their at-rest information on the recording sheet.

Have the Breathers do jumping jacks in place for 60 seconds.

After they have completed the exercise, they should record their breathing rates in the recording sheet.

Follow-up discussion

Discuss the results and ask questions such as

- In which case did you breath more?
- Do you think your respiration rate (breathing rate) would be faster or slower if you ran for 10 minutes before doing the post-activity?
- Would there be a difference in your respiration rate if you checked it when you were sleeping and then again when you were walking?

Explanation

The purpose of respiration is to provide the body with the oxygen it needs to function. Oxygen enters the body through the mouth and nose, travels through the trachea into our lungs and from the lungs into alveoli, which allow the oxygen to pass into the bloodstream.

Oxygen is used to produce energy for the body in a process called aerobic respiration. The more active a body is, the more energy it uses and the more oxygen it needs.

When the body is using oxygen at a faster rate than it is breathed in, it develops need for more oxygen. Breathing faster than normal even after the activity has stopped fulfills this need.

Wrap-up Q/A

Why do we breath fast after exercise?

Level: 5
Term : 1
Week : 4
Day : 4

Breathing rate Recording

Worksheet

Resting Rate

Name:____________

Number of breaths in one minute: ______________

After Exercise

Name:____________

Number of breaths in one minute: ______________

Breathing rate Recording

Worksheet

Resting Rate

Name:____________

Number of breaths in one minute: ___

After Exercise

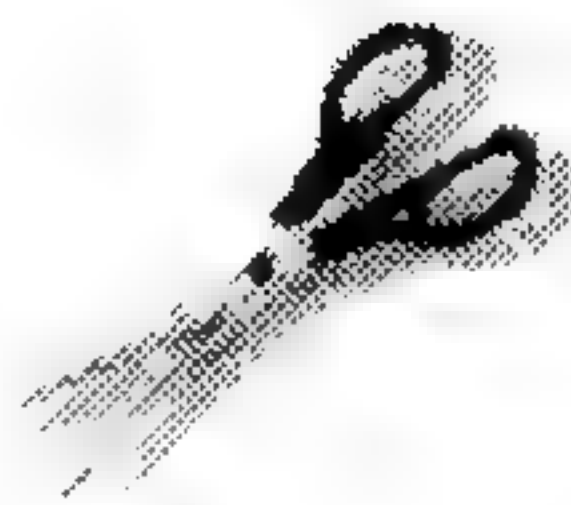
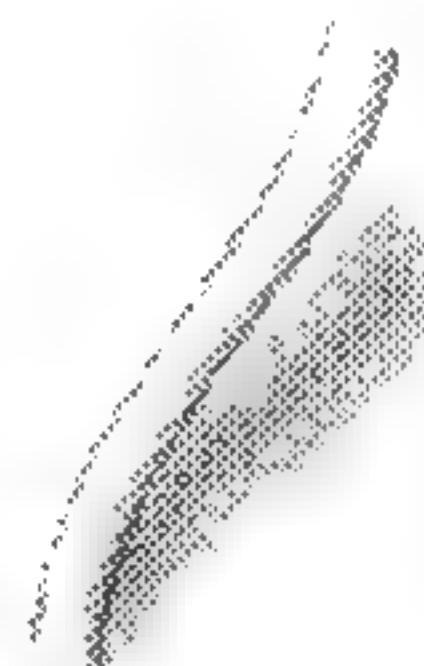
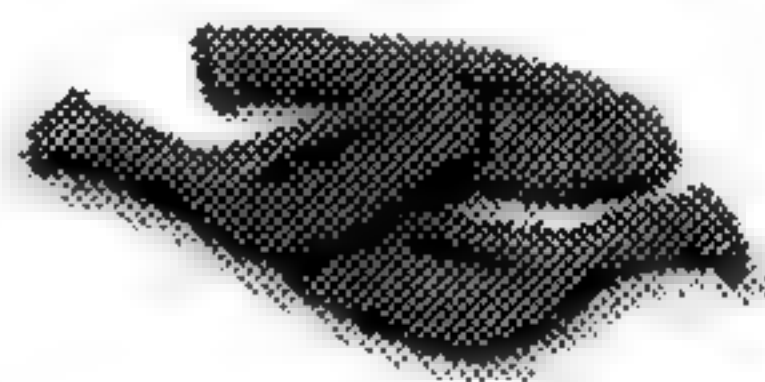
Name:____________

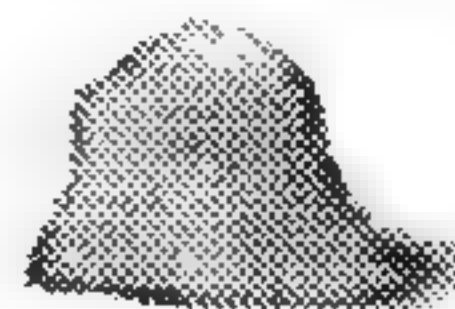
Number of breaths in one minute: _______

Level 5		Life Systems
Term 1	Lesson Plan	
Week 4		
Day 5		

Topic: human organ systems
Objective: To understand the function of lungs
Activity: Making a model of lungs

Material:

An OLD pair of scissors (not your mother's good ones)

Six inches of surgical tubing

Three good-sized balloons

Two rubber bands

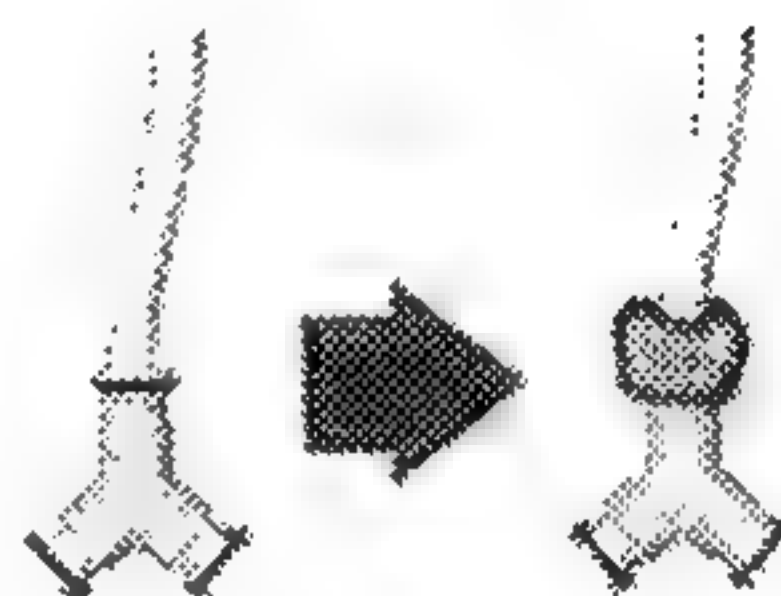
A large lump of modeling clay

A clear plastic one-liter bottle

A three-way hose connector (available at the hardware store)

Procedure:

Step One:

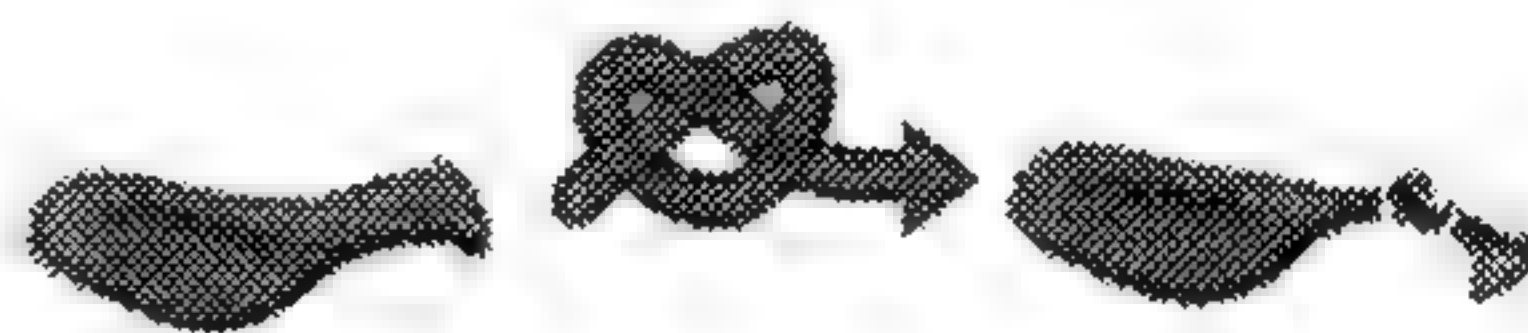
Push the plastic tube into one opening of the hose connector.

Use the clay to make an airtight seal.

Tightly fix a balloon onto each of the other openings with the rubber bands; making sure the seal is airtight.

Step Two: Prepare the "chest cavity"

Carefully cut off the bottom 1 inch from the bottle, using the scissors. Make sure the cut edge of the bottle is smooth.

Place the lungs (balloons and connector) inside, and seal the plastic tube into the neck of the bottle with the rest of the clay to make an airtight fit.

Step Three: Prepare the "diaphragm"

Tie a knot in the neck of the third balloon, then carefully cut it in half, crossways.

Gently stretch the half of the balloon with the knot in it over the bottom of the bottle, pulling it up around the sides. Make the balloon as taut as you can—like the top of a drum.

Step Four: Start breathing!

The lower part of the balloon represents the diaphragm, the main breathing muscle. Pull it down, as though you were inhaling.

This lowers the air pressure in the bottle. Air from outside rushes in and makes the two balloons expand, just like the real lungs inside your chest.

Level 5	**Assessment**	**Life systems**
Term 1		
Week 4		
Day 6		

Note: Use the worksheets and questions given with the lessons.

Science Lesson Plans

Level 5
Term 1

Week 5

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
5	Life Systems	Human organ Systems	1	To identify parts and understand the function of human heart	H.W
5		do	2	To understand the function of circulatory system in human body	H.W
5		do	3	To understand the function of circulatory system in human body	H.W
5			4	To identify different parts of the digestive system	
5			5	Assessment	

Level 5	Lesson plan	Life systems
Term 1		
Week 5		
Day 1		

Topic: Human organ systems

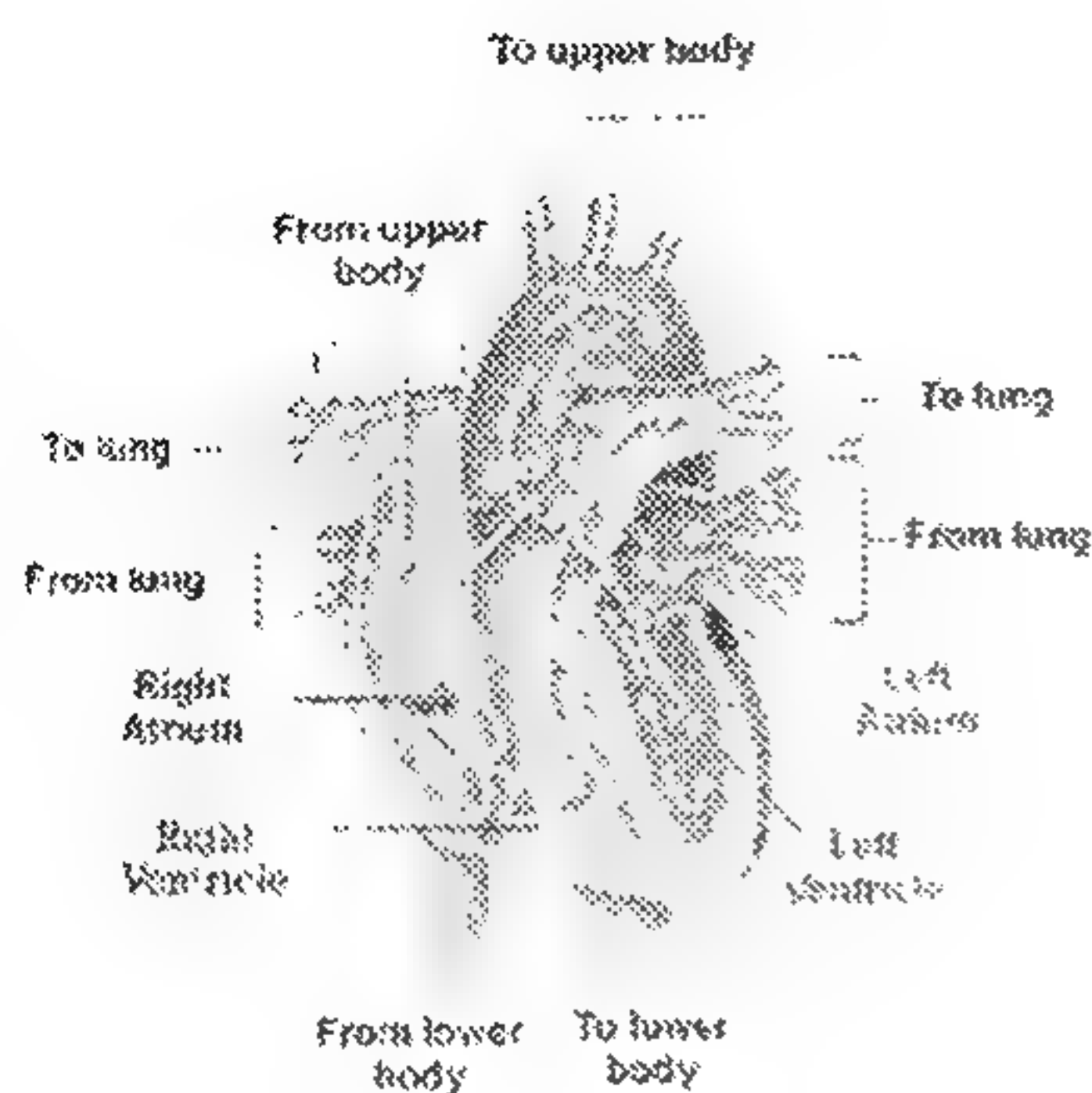
Objective: to identify part and understand the function of human heart

Activity: Drawing and written work
Materials: poster, or a model of a heart, copy of the worksheet for each child, chalk, pencils
Procedure:

Warm up Q/A

- Ask the students to put their hands on their chest and ask what do they feel?
- What is this beating sound?
- Which organ is making this sound?
- What is the function of heart?
- Listen to their responses and then explain.

Explanation

- Your heart is the engine or pump for your body.
- It never stops pumping blood round the body's one-way system.
- Draw this diagram on the chalkboard or show them the poster and explain.

- The heart is a stretchy bag of muscle roughly the size of your fist, which beats about seventy times a minute.
- It weighs less than half a kilogram yet it can pump thousands of liters of blood through your body every day.
- Your heart has thick muscular walls.
- Your heart has four main compartments or chambers.
- Between each compartment of the heart there is a valve, which stops the blood from flowing the wrong way.
- There is a muscular wall that separates the left and right sides of the heart called **septum.**
- Blood is pumped out of the heart in two directions.
- First it sends blood without any oxygen to the lungs to get oxygen.
- It then pumps the blood containing oxygen around all the other parts of the body. The blood vessels that carry blood to all parts of the body are called **arteries.**
- After delivering its oxygen, the blood returns to the heart to start the process of getting oxygen all over again.
- The blood vessels that bring the blood back to heart are called **veins.**
- Then tell,
  you can easily find places on your body where you can feel your pulse, the beat of blood as it rushes through your veins and arteries. Your wrist is a good place to try.

Activity: Written work

Distribute the worksheet and explain the task.

Wrap-up Q/A

What is the function of the heart?

'evel: 5 Term: 1
Week: 5 Day: 1

Heart worksheet

Answer these questions

In which two directions heart pumps the blood?

___

___

What are the blood vessels that bring blood to heart called?

___

___

___

What are the blood vessels that take away blood from heart called?

___

___

What stops the blood from going in the right direction?

___

___

Label the heart diagram below using the list of definitions. Then color the diagram in red and blue colors to show fresh and used up blood.

Note: On the diagram, the right side of the heart appears on the left side of the picture (and vice versa) because you are looking at the heart from the front

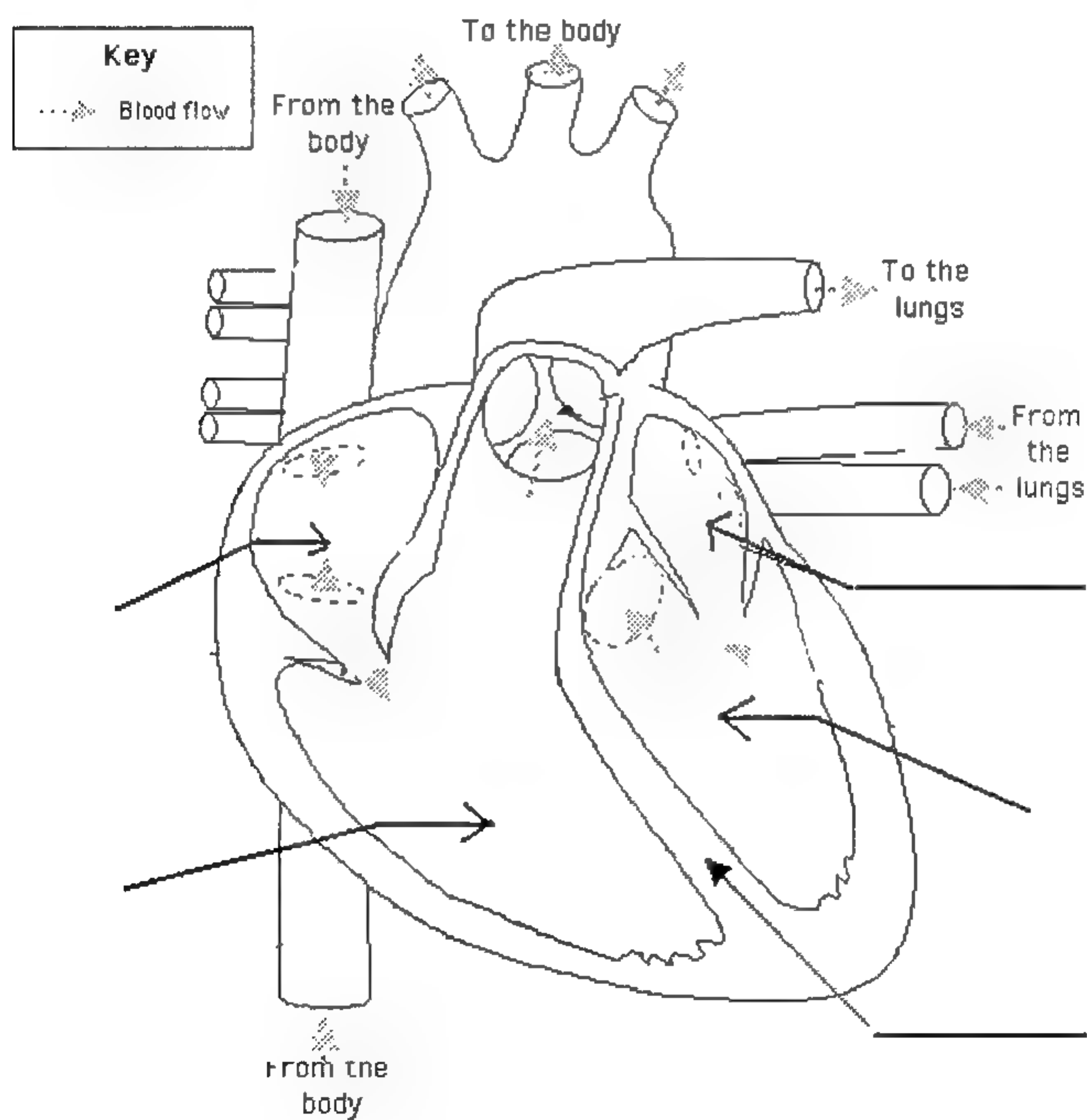
Definitions

Septum - the muscular wall that separates the left and right sides of the heart

Left atrium - the left upper chamber of the heart. It receives oxygen-rich blood from the lungs.

Left ventricle - the left lower chamber of the heart. It pumps the blood through the aortic valve into the aorta.

Right atrium - the right upper chamber of the heart. It receives oxygen-poor blood from the body.

Right ventricle - the right lower chamber of the heart.

Level 5	Lesson plan	Life systems
Term 1		
Week 5		
Day 2		

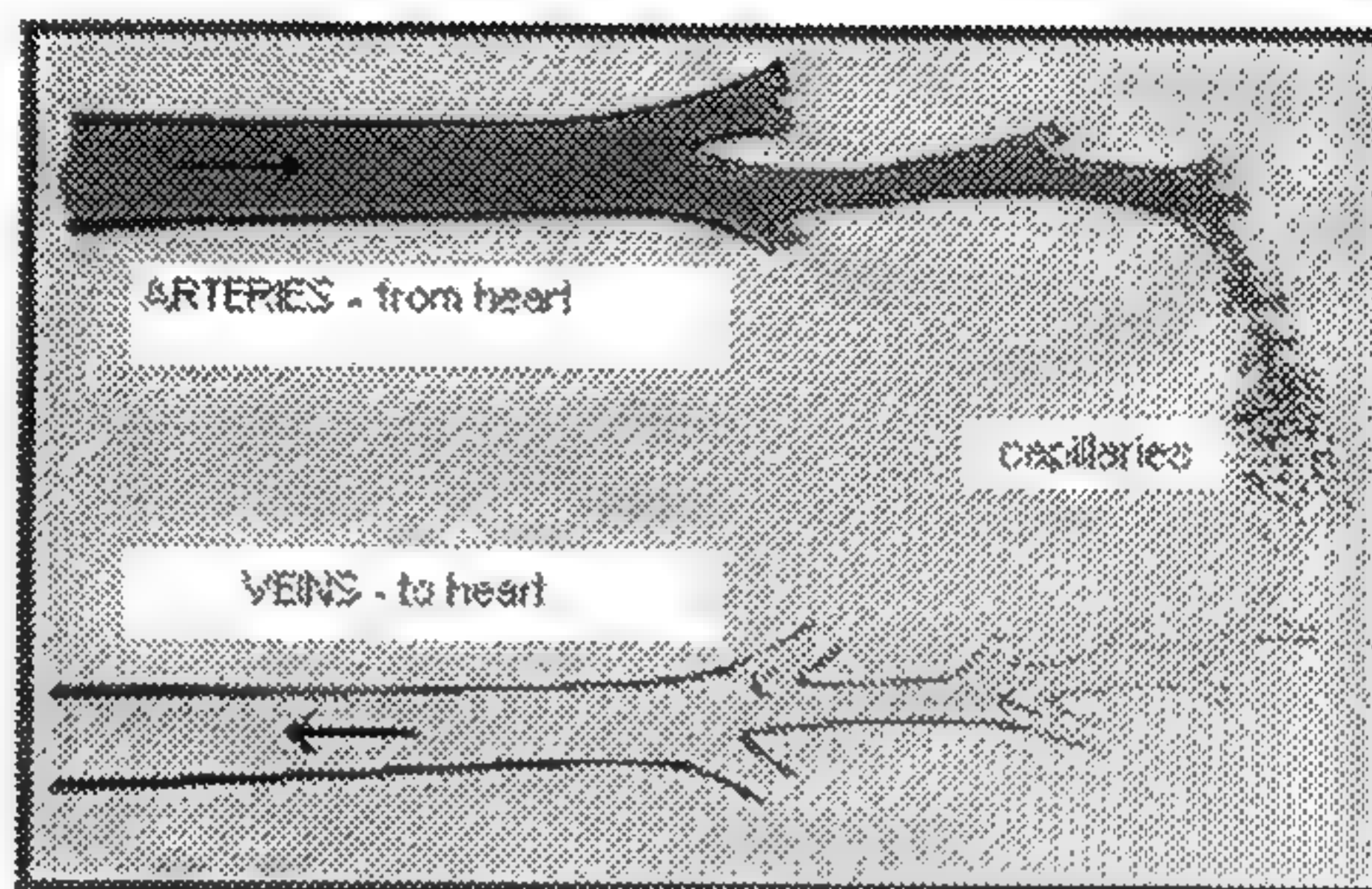
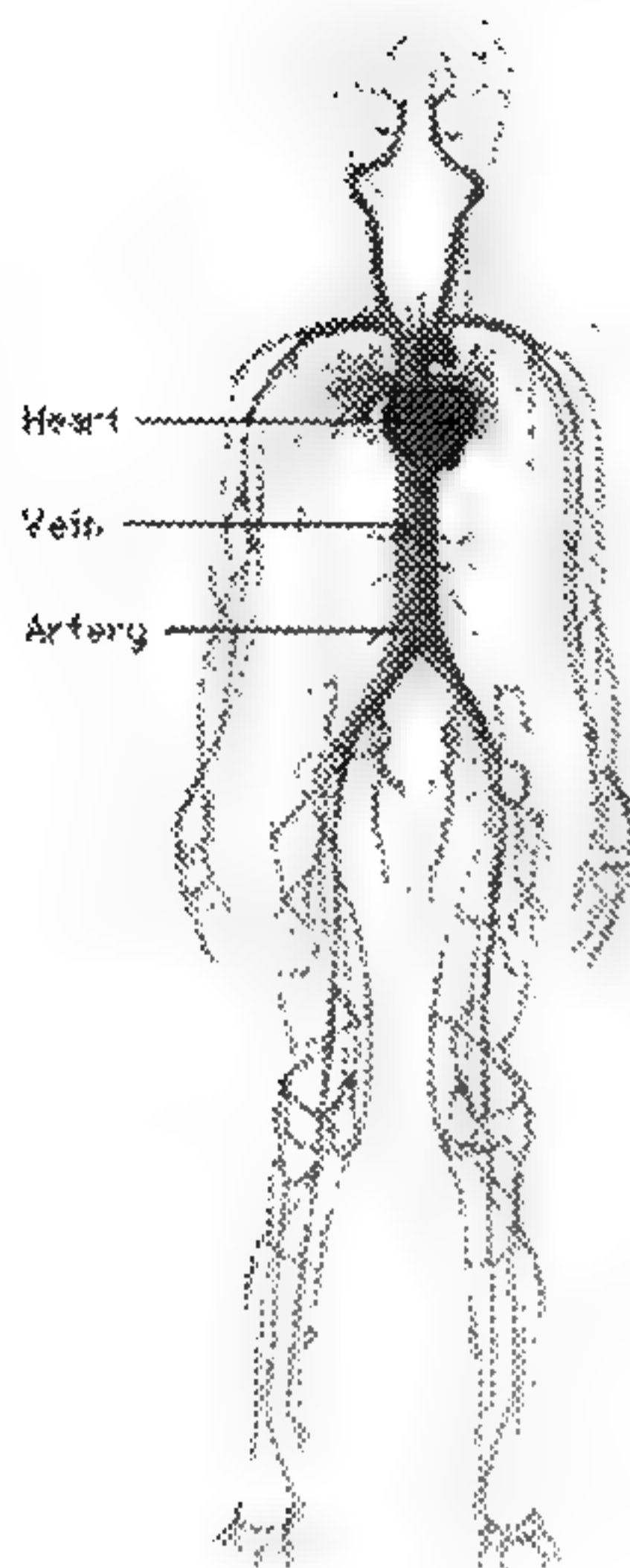
Topic: Human organ systems

Objective: to understand the function of circulatory system in human body.

Activity: Drawing and written work
Materials: Circulatory system poster, chalk, pencils, copy of the worksheet for each child
Procedure:
Warm up Q/A

- Have the students place two fingers on their neck below their ear to feel the rhythmic motion of pumping of blood and ask
- What is this that we are feeling? (A pulse or heart beat)
  Ask, What is the main organ of human circulatory system?
- What are major parts of the heart?
- What do we mean by circulatory system?
- Inform the students that today we will discuss about the circulatory system.

Explanation

Show the circulatory system poster and explain.

- A typical person has around 4-5 litres of blood.
- The blood is the transport system by which oxygen and nutrients reach the body's cells, and waste materials are carried away.
- Circulatory system means a system, which is responsible for the circulation of blood in the body.
- Circulatory system consists of heart, veins, arteries and capillaries.
- The heart, a muscular organ, positioned behind the ribcage and between the lungs, is the pump that keeps this transport system moving.
- The body's circulation has two parts, with the heart acting as a double pump.
- Blood from the right side pump is dark red (bluish) and low in oxygen.
- The blood vessels, which carry the blood from heart to other parts of the body, are called **arteries.**
- The blood vessels, which carry blood towards the heart from other parts of the body, are called **veins.**
- Blood travels along arteries to the lungs where it receives fresh supplies of oxygen and becomes bright red.
- It flows along veins back to the heart's left side pump.
- Blood leaves the left side of the heart and travels through arteries, which gradually divide, into capillaries. Very thin blood vessels are called **capillaries.**
- In the capillaries, food and oxygen are released to the body cells, and carbon dioxide and other waste products are returned to the bloodstream.

- The blood then travels in veins back to the right side of the heart, and the whole process begins again.

Activity: (Wrap-up Q/A) written work

- Distribute the worksheet and explain the task.
- Written work to be done in notebooks.
- **Task:**
- **Answer these questions**
- What makes up your circulatory system?
- What is the function of circulatory system?

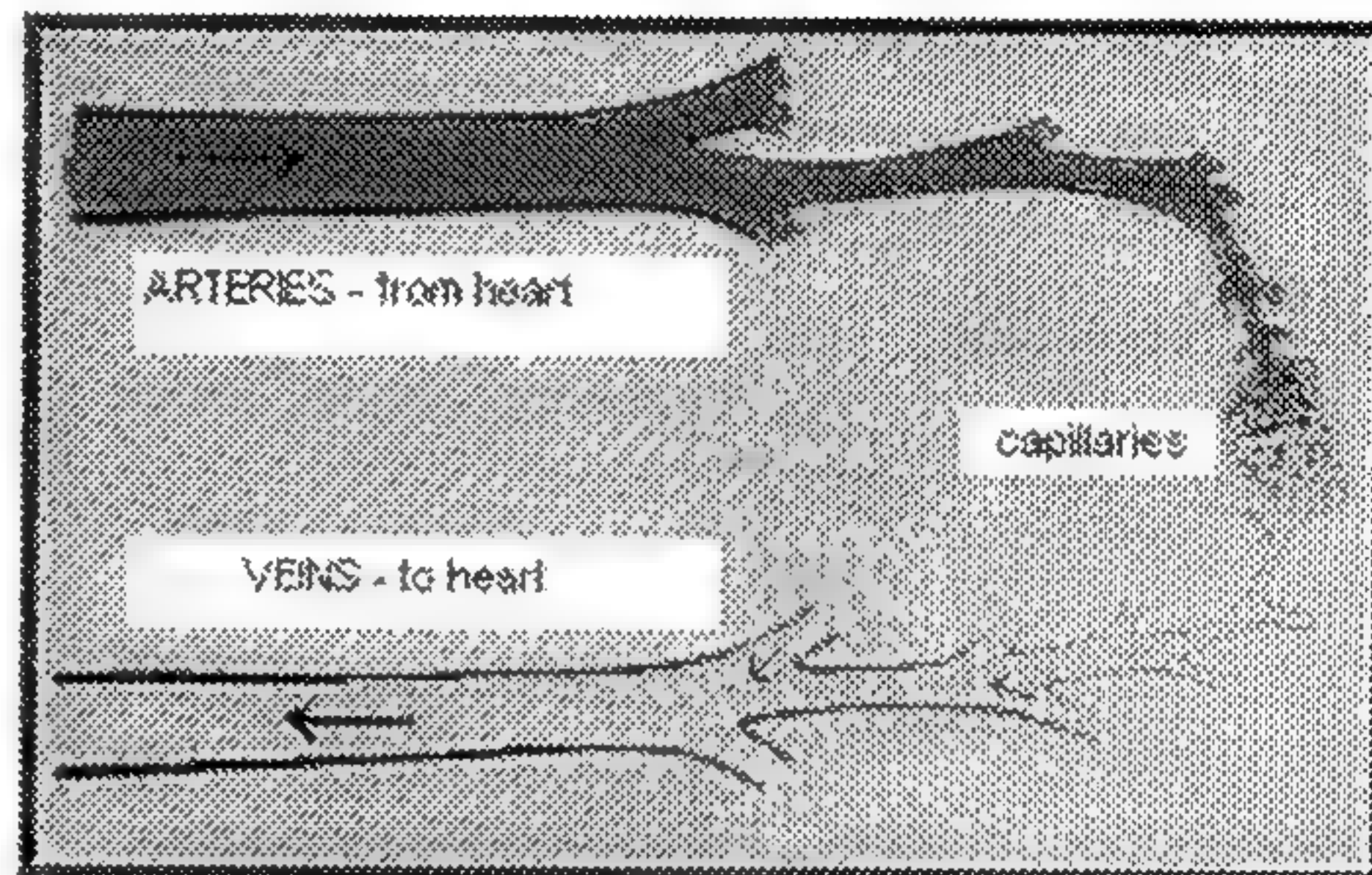
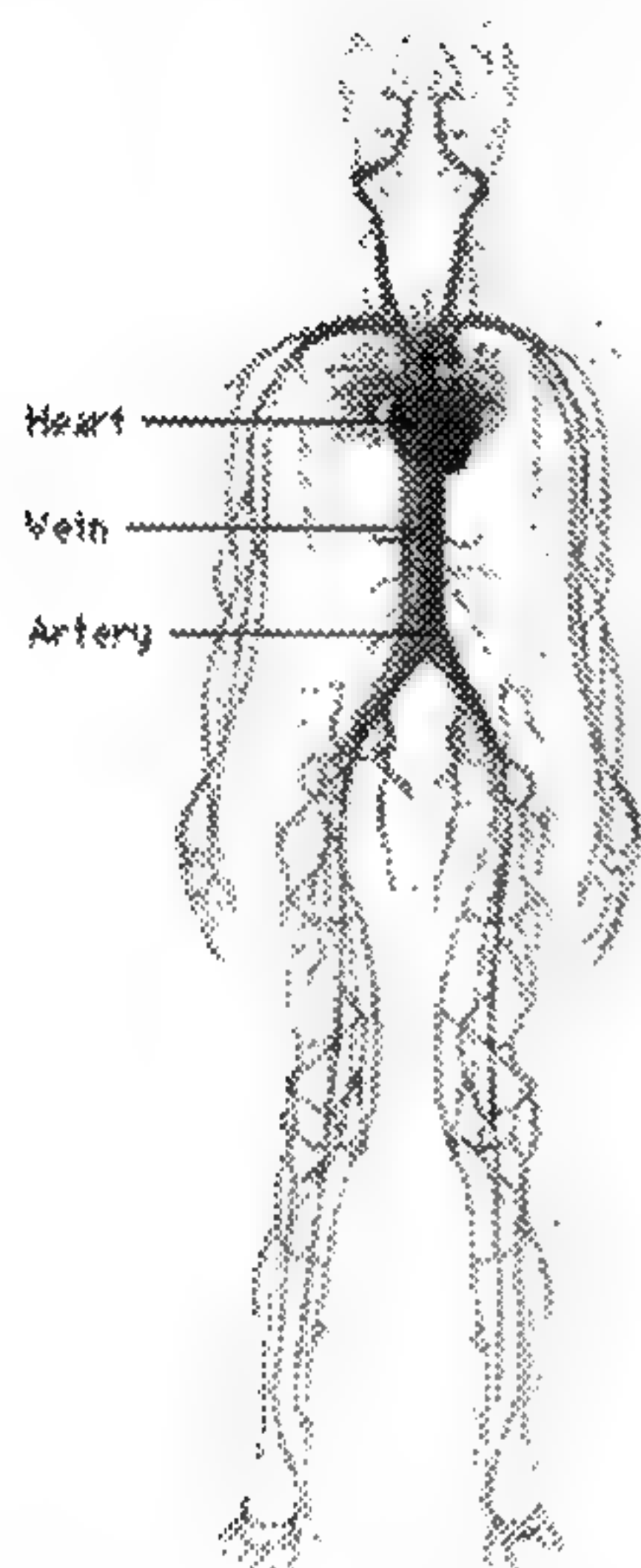
H.W Revise the work done in class

Level: 5 Term: 1

Week: 5 Day: 2

Circulatory system

Worksheet

Look at these drawings, draw and color.

Draw here.

Level 5	Lesson plan	Life systems
Term 1		
Week 5		
Day 3		

Topic: Human organ systems

Objective: to understand the function of circulatory system in human body.

Activity: Drawing and written work
Materials:
Circulatory system poster, pencils, notebooks, chalk
Procedure:

Warm up Q/A

- Ask, What makes up your circulatory system?
- What is the function of circulatory system?
- Listen to their responses.
- Then revise the concept introduced in the previous lesson.

Activity: Written work

Write down the task on the board.

Task:

Choose the correct answer.

A typical person has around

4-5 litres of blood.

7-8 litres of blood

Blood is pumped to all parts of the body by

Heart

ungs

The body's circulation has

Three parts

Two parts

The blood vessels, which carry the blood from heart to other parts of the body, are called

Arteries

Veins

The blood vessels, which carry blood towards the heart from other parts of the body, are called

Veins

Arteries

Very thin blood vessels are called

Capillaries

Branches

H.W Revise the work done in class.

Level 5	Lesson plan	Life systems
Term 1		
Week 5		
Day 4		

Topic: Human organ systems

Objective: to identify different parts of digestive system

Activity: Drawing and written work

Materials: copy of the worksheet for each child, chalk, pencils, poster
Procedure:
Warm up Q/A

- Ask, What gives us energy to work and play? (Food)
- Then ask.
- What is your favorite food?
- Have you ever thought about what happens to your food after you have swallowed it? (It digests).
- Ask, how do you eat your food? Do you eat it whole or cut it, chew it? (Cut and chew it).
- Listen to their responses
- Then tell today we will discuss what happens to the food that we eat after we swallow it?

Explanation
Show a poster or draw it on the chalkboard.

Food provides us with fuel to live energy to work and play. I t also provides the raw materials to build new cells

Digestion means breaking down of food into its components.

The digestive system is the system that helps the food to digest and become part of the body

All the different varieties of food we eat are broken down by our digestive system and transported to every part of our body by our circulatory system.

The digestive system consists of various organs. Each organ has its won specific function. The main part of the digestive system is the digestive tract.

This is like a long tube, some nine metres in total, through the middle of the body.

- It starts at the mouth, where food and drink enter the body, and finishes at the anus, where leftover food and wastes leave the body.
- The major organs of digestive system are **mouth, oesophagus, stomach, liver, pancreas, gallbladder, large intestine, small intestine, rectum and anus.**
- When we eat food the digestion starts right from the mouth. In mouth teeth bite off and chew food into a soft pulp that is easy to swallow.
- Chewing mixes the food with watery saliva, from 6 salivary glands around the mouth and face, to make it moist and slippery.
- From the mouth food is passed or swallowed to **oesophagus.**
  The oesophagus, or gullet is a muscular tube. It takes food from the throat and pushes it down through the neck, and into the stomach.

Activity: Written work

Distribute the worksheet and explain the task.

Wrap-up Q/A

What makes up your digestive system?

Level: 5 Term: 1
Week: 5 Day: 4

Digestive System

Worksheet

Which major organs make up your digestive system?

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What happens to food in the mouth?

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What is gullet or oesophagus?

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Copy and label the drawing.

Level 5	Assessment	Life systems
Term 1		
Week 5		
Day 5		

Note: use the worksheets and questions given with each lesson

Science Lesson Plans

Level 5
Term 1

Week 6

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
6	Life Systems	Human organ Systems	1	To identify parts and understand the function of digestive system	H.W
6		do	2	To identify parts and understand the function of digestive system	H.W
6		do	3	To identify parts and understand the function of excretory system	H.W
6			4	To understand the function of urinary system in human body	
6			5	To understand the function of urinary system in human body	
6			6	Assessment	

Level 5	Lesson plan	Life systems
Term 1		
Week 6		
Day 1		

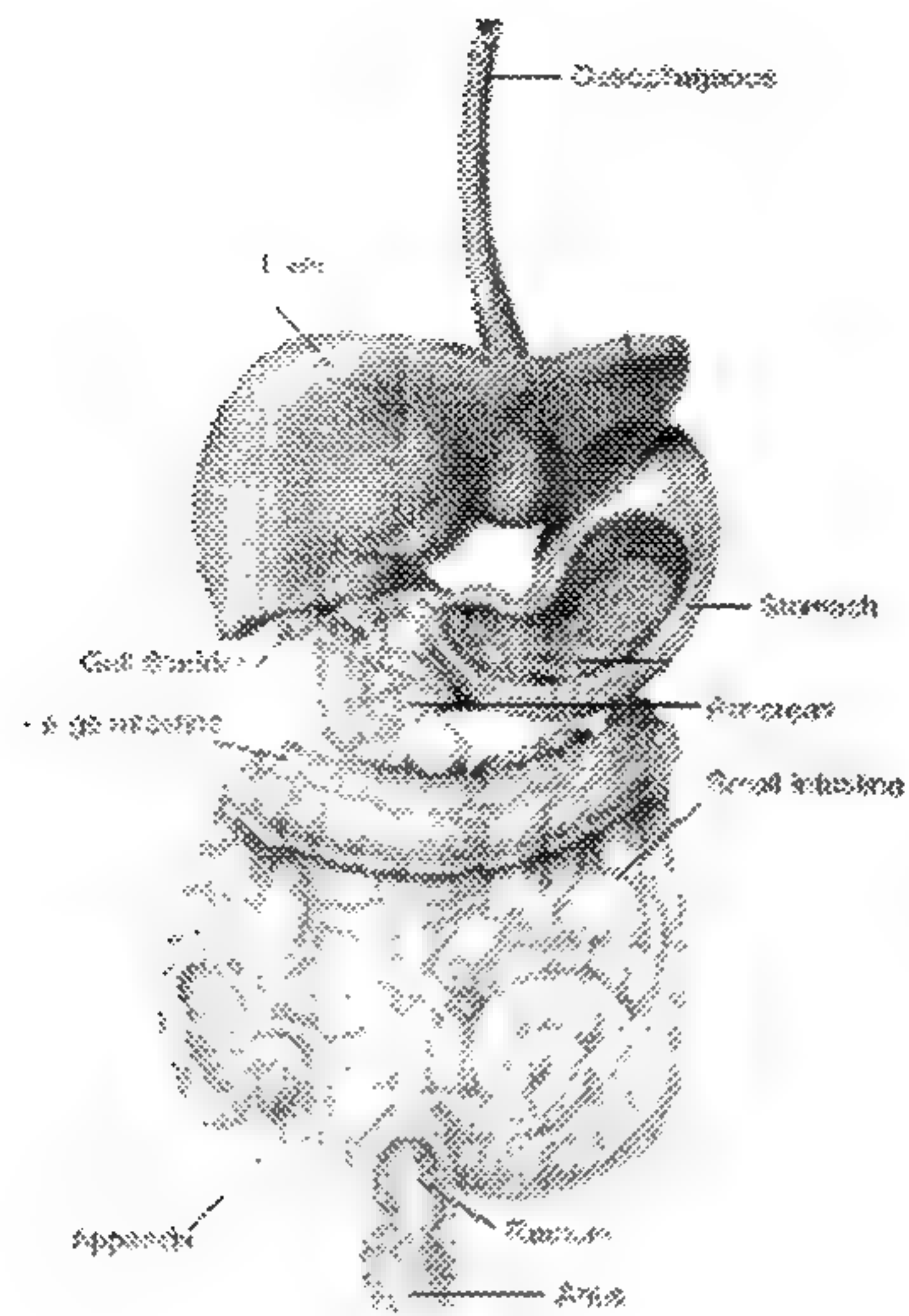
Topic: Human organ systems

Objective: To identify parts and understand the function of digestive system

Activity: Drawing and written work
Materials: Copy of the worksheet for each child, poster, chalk, pencils
Procedure:
Warm up Q/A

- What is digestive system?
- Ask, What makes up your digestive system?
- What happens to food in mouth?
- What is oesophagus?
- Listen to their responses and then explain.

Explanation
Show the poster to students or draw the diagram on chalkboard and explain.

Stomach
Small intestine

Through gullet or oesophagus food enters the stomach.
The stomach has thick muscles in its wall These contract to mash the food.
The stomach also produces strong digestive juices, which mix with the food and break it down

Pancreas
The pancreas, like the stomach, makes powerful digestive juices called enzymes, which help to digest food further as it enters the small intestines.

Gall Bladder
This small baglike part is tucked under the liver. It stores a fluid called bile, which is made in the liver. As food from a meal arrives in the small intestine, bile flows from the gall bladder along the bile duct into the intestine. It helps to digest fatty foods and also contains wastes for removal

Small Intestines
This part of the tract is narrow, but very long - about 20 feet.
Here, more enzymes continue the chemical attack on the food.
Finally the nutrients are small enough to pass through the lining of the small intestine, and into the blood
They are carried away to the liver and other body parts to be processed, stored and distributed.

Liver
Blood from the intestines flows to the liver, carrying nutrients, vitamins and minerals, and other products from digestion

The liver is like a food-processing factory with more than 200 different jobs.

It stores some nutrients, changes them from one form to another, and releases them into the blood according to the needs of the body.

Large Intestine
Any useful substances in the leftovers, such as spare water and body minerals, are absorbed through the walls of the large intestine, back into the blood.

The remains are formed into brown, semi-solid faeces, ready to be removed from the body

Rectum and Anus
The end of the large intestine and the next part of the tract, the rectum, store the faeces.
These are finally squeezed through a ring of muscle, the anus, and out of the body

Activity: Written work

Distribute the worksheet and explain the task

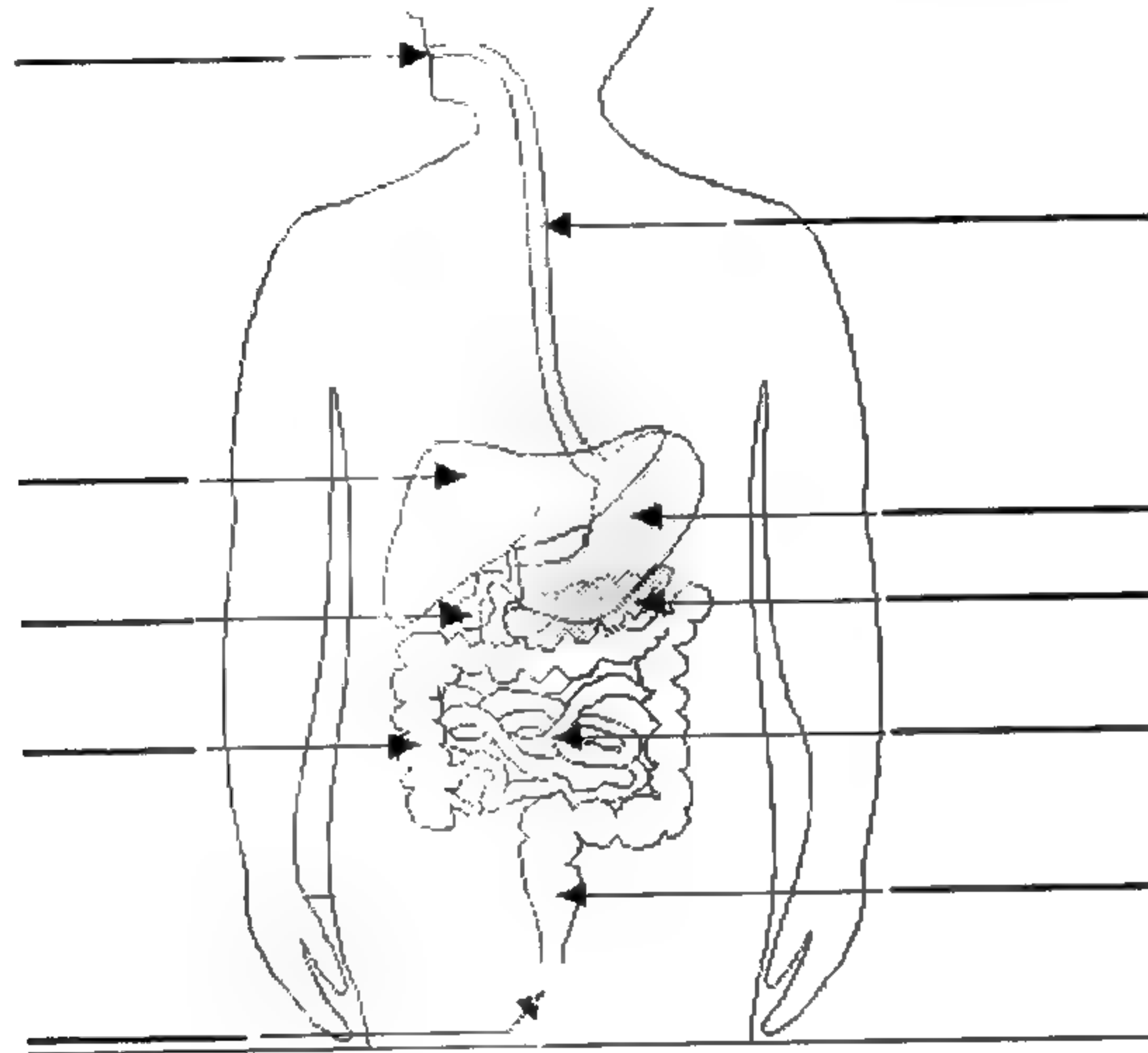
Wrap-up Q/A

Which system helps us to digest food?

Level : 5 Term : 1
Week : 6 Day : 1

Function of digestive system

Worksheet

Q 1) Label the parts of digestive system after reading the list of definitions.

Definitions

anus - the opening at the end of the digestive system from which feces exit the body.

esophagus - the long tube between the mouth and the stomach, to force food from the throat into the stomach

gall bladder - a small, sac-like organ. It stores and releases bile (a digestive chemical which is produced in the liver) into the small intestine.

large intestine - the long, wide tube in which food goes after it goes through the small intestine

liver - a large organ located above and in front of the stomach. It makes bile which breaks down fats and some blood proteins.

mouth - the first part of the digestive system, where food enters the body.

pancreas - an enzyme-producing gland located below the stomach and above the intestines

rectum - the lower part of the large intestine, where feces are stored before they are excreted from the body.
small intestine - the long, thin tube in which food goes through after it leaves the stomach
stomach - a sack-like, muscular organ that is attached to the esophagus.

Q 2) Draw and label the digestive system.

Level 5	Lesson plan	Life systems
Term 1		
Week 6		
Day 2		

Topic: Human organ systems

Objective: to identify parts and understand the function of digestive system

Activity: Written work
Materials: chalk, pencils, poster
Procedure:
Warm up Q/A

- Revise the concepts introduced in the previous lesson.
- Write down the task on the chalkboard and explain it.

Task:

Answer these questions

Q1) What happens to food in stomach?

Q2) What is the function of liver?

Q 3) Choose the correct answer.

Pancreas secrets

a) Digestive enzymes

b) Saliva

Gall Bladder stores a fluid called

a) Bile

b) Saliva

From small Intestines nutrients pass into

a) Blood

b) Out of the body

H.W Revise the work done in class.

Level 5	Lesson plan	Life systems
Term 1		
Week 6		
Day 3		

Topic: Human organ systems

Objective: To identify parts and understand the function of excretory system

Activity: Explanation, written work
Materials. chalk, pencils, notebooks
Procedure:
Warm up Q/A

- What happens to excess water and waste materials in the body?
- Listen to their responses and then tell.
- There is a system of removal of waste materials and excess water in the body. This system is called **excretory system.**

Explanation

- Our body produces **waste in liquid, gaseous and solid** form.
- The excretory system removes water, waste material and harmful substances from the body.
- **Excretion** is the process where waste products and toxic materials are removed from the body. It takes place throughout our body.
- Without the excretory system, waste and toxic materials would gather up in our body and would be hazardous to our health.

The lungs, skin, kidneys and lower intestine are involved in excretion.

Lungs

- When we breathe, our cells convert oxygen into energy, they return carbon dioxide.
- This carbon dioxide has to be removed if not we might die. This is the job of our lungs

Excretory and Urinary Systems

- Solid wastes are removed from the body through the intestine during bowel movements
- The urinary system is considered part of the excretory system.

- The kidneys and bladder are parts of the urinary system.

Skin

- Our skin is actually an excretory organ too.
- When we exercise vigorously or feel hot, our skin excretes sweat.
- The sweat consists of mainly water and also nitrogenous substances present in minute quantities.

Activity: written work

- In what form our body produces waste?
- What is excretion?
- Which organs makeup excretory system of the human body?

Wrap-up Q/A

Which organs makeup excretory system of the human body?

Level 5	Lesson plan	Life systems
Term 1		
Week 6		
Day 4		

Topic: Human organ systems

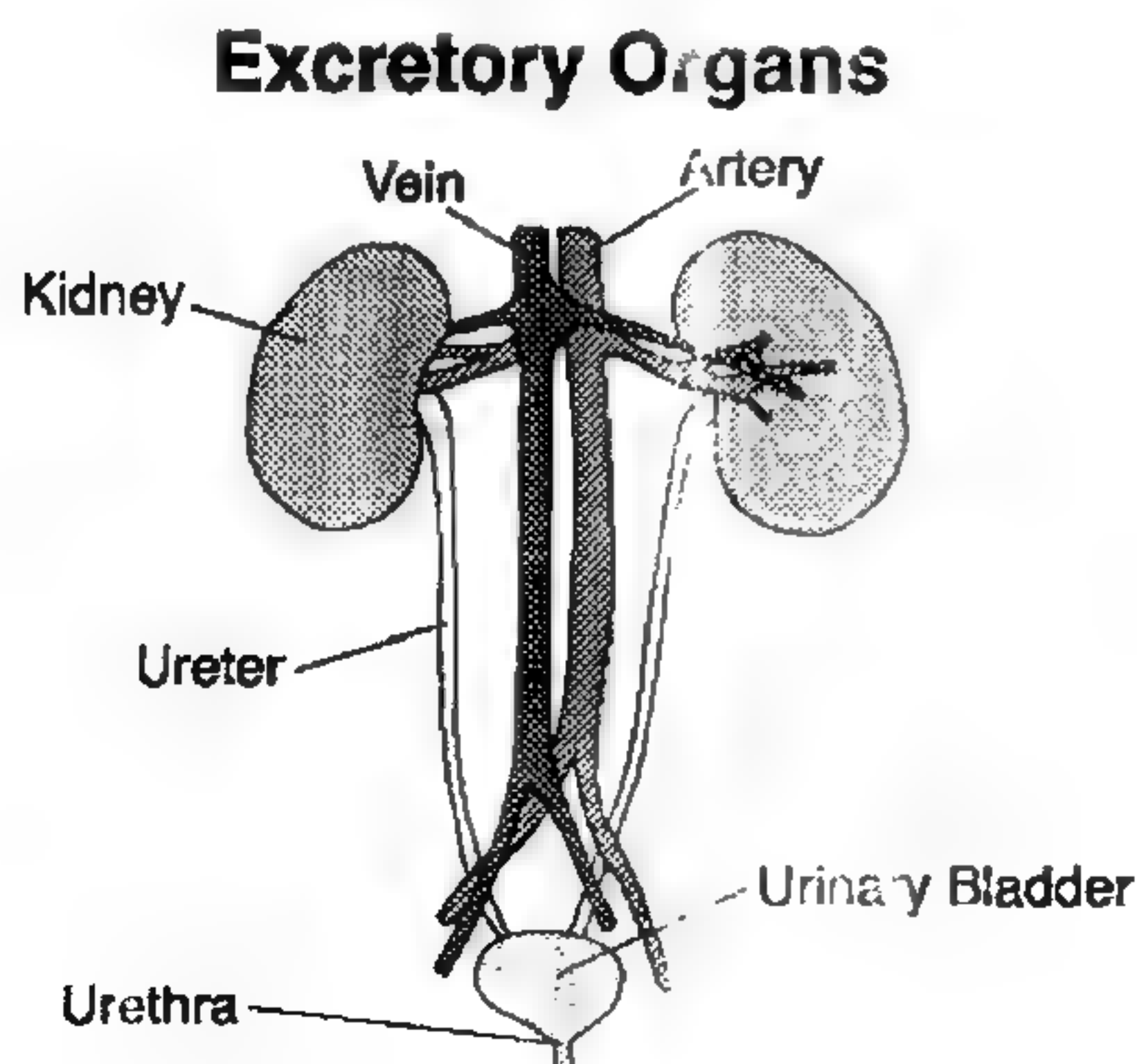
Objective: to identify parts and understand the function of urinary system

Activity: drawing and written work
Materials: chalk, poster, copy of the worksheet for each child
Procedure:

Warm up Q/A

- Ask, in what form our body produces waste?
- What is excretion?
- Which organs makeup excretory system of the human body?
- Then tell today we will discuss the urinary system, which is part of the excretory system.

Explanation

Show the poster to students or draw this diagram on the chalkboard and then explain.

- Our urinary system consists of a pair of **kidneys, a pair of ureters, a urinary bladder** and the **urethra.**

- The kidney help to remove excess water and dissolved waste substances from the body.
- At the center of each kidney, the artery, the vein and the nerves are connected. From the center of kidney a narrow tube, the ureter, travels downwards to join the urinary bladder.
- Urine from each kidney passes through the ureter to the urinary bladder.

- The bladder is an elastic, muscular bag. It stores urine.
- At the bottom of the bladder is a muscle. When the bladder is full, the muscle relaxes and allows the urine to flow into the urethra and pass out of the body.
- In every 100g of urine there is 96.0g of Water, 1.8g Mineral Salts (mainly salt), 2.0 g Urea, 0.2 g other nitrogenous substances.

Activity: written work

Distribute the worksheet and explain the task.

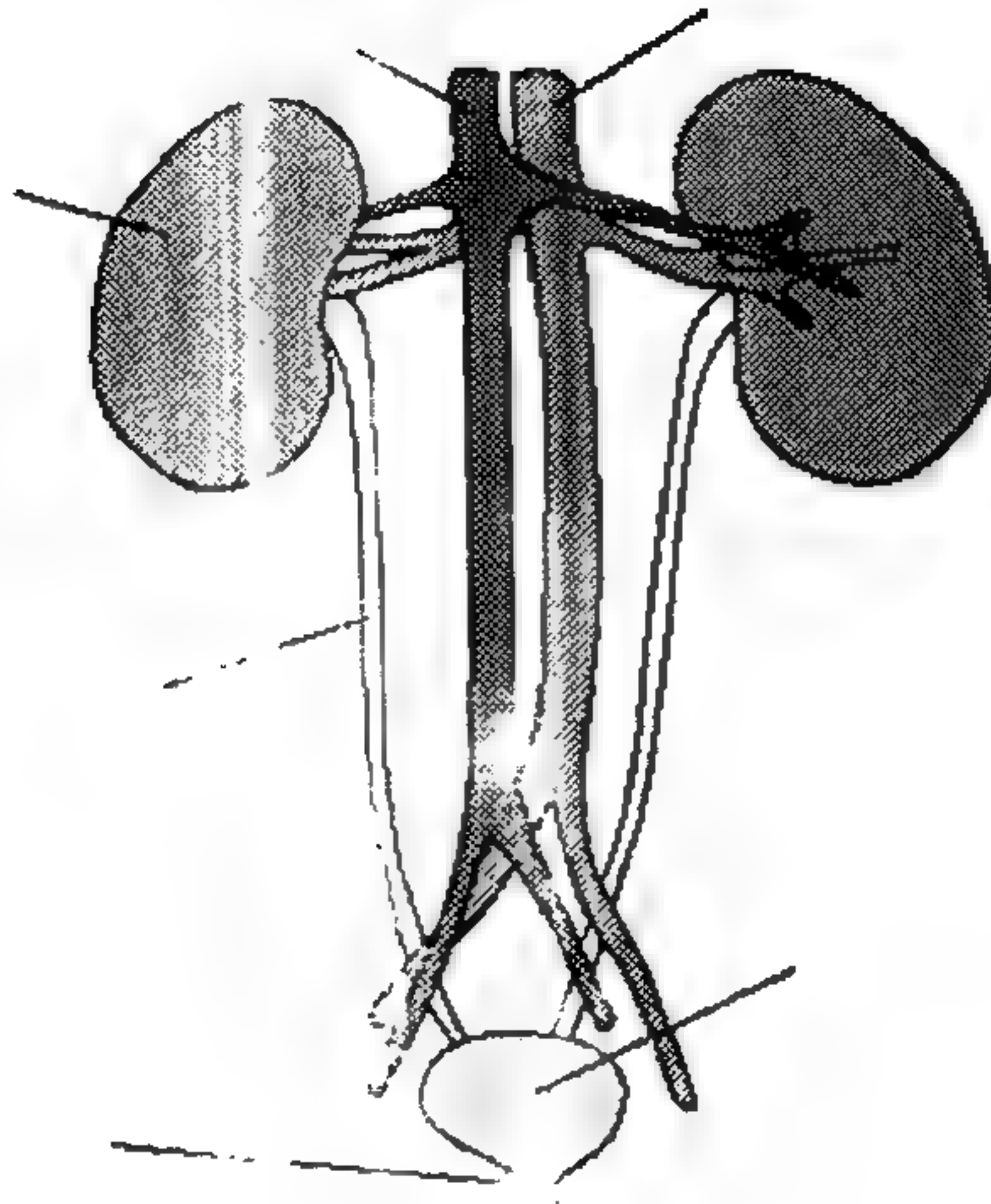
Wrap-up Q/A

What are different parts of urinary system?

Level: 5 Term: 1
Week: 6 Day: 4

Excretory system

Worksheet

Label the diagram.

Answer these questions

Which organs make up the urinary system?

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Level 5	Lesson plan	Life systems
Term 1		
Week 6		
Day 5		

Topic: Human organ systems

Objective: to identify parts and understand the function of urinary system

Activity: making a model

Materials:

- Body diagram
- Plasticine different colors
- Glue
- Red beans
- Scissors
- Yellow yarn
- Red yarn
- Blue yarn
- Chart paper
- Copy of the worksheet for each group.

Warm up Q/A

Briefly revise the concepts introduced in the previous lesson.

- **Procedure:**
  Divide the students in pairs
- Distribute the material.

Each student needs:

- Glue
- 2 Kidney Beans (Represents the Kidneys)
- 2 pieces yellow yarn (Represents the Ureters)
- Plasticine (Represents the Bladder)
- 2 pieces of Red Yarn (Represents the Arteries)
- 2 pieces of Blue Yarn (Represents the Veins)

Making the Model:

- Draw and cut the human figure on the chart paper.
- Then follow the excretory system organs diagram and draw these organs in the body cutout

1. Glue on the kidney beans
2. The yarn will be approx 3 inches long. The student will have to separate the yarn into two pieces about 1/2 way up so that the arteries and the veins can go down each leg. Glue on the arteries and the veins.
3. Fill the bladder and urethra with plasticine.
4. Glue the approximately 1 inch long yellow yarn into the bladder at an angle.
5. This represents the ureters draining down into the bladder.
6. The students now have a wonderful model so that they can describe to a partner just exactly what happens in the Excretory System.

Follow-up discussion

Invite the students to share their work with the class.

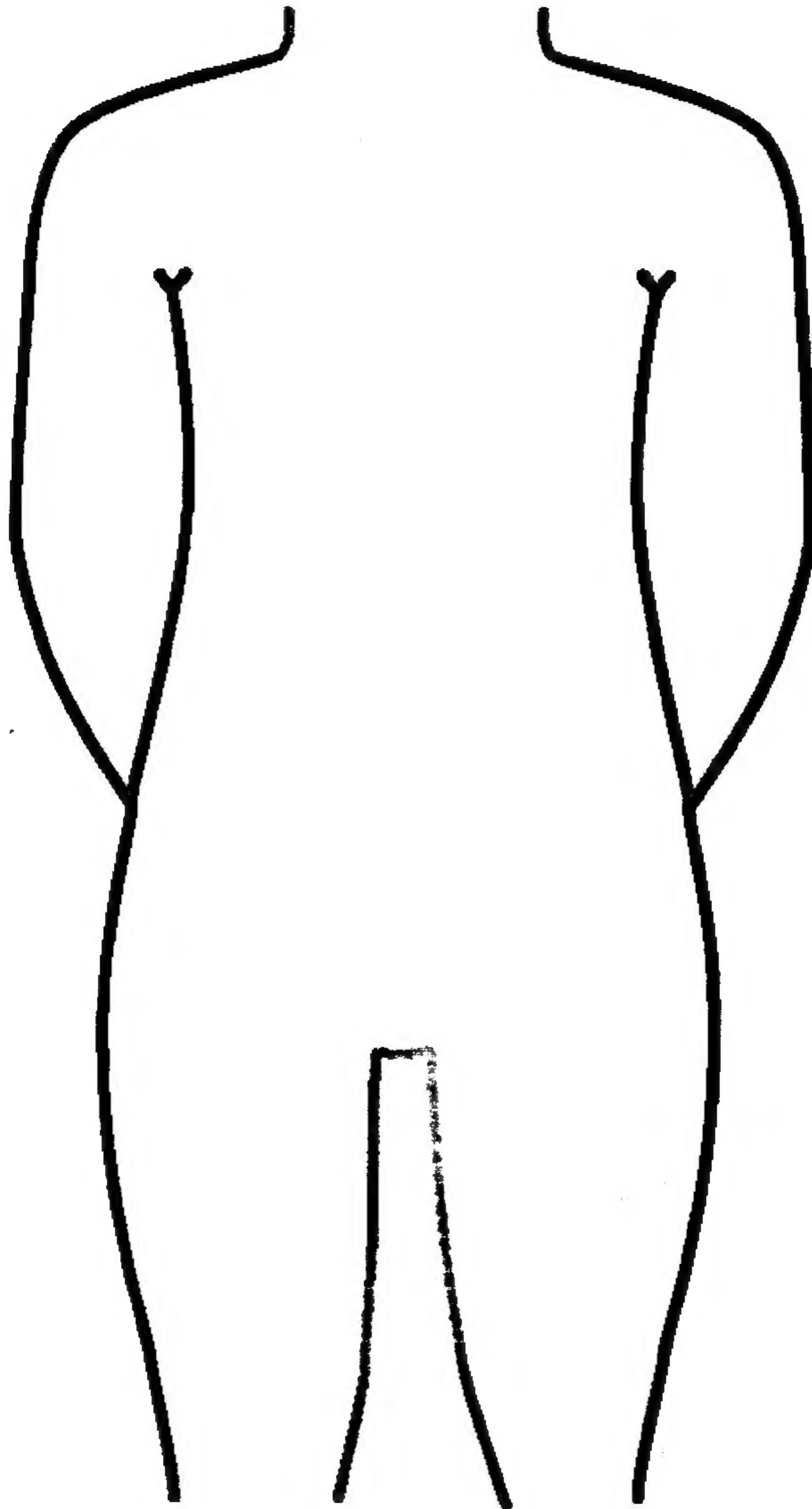
Ask. them to describe what they have made.

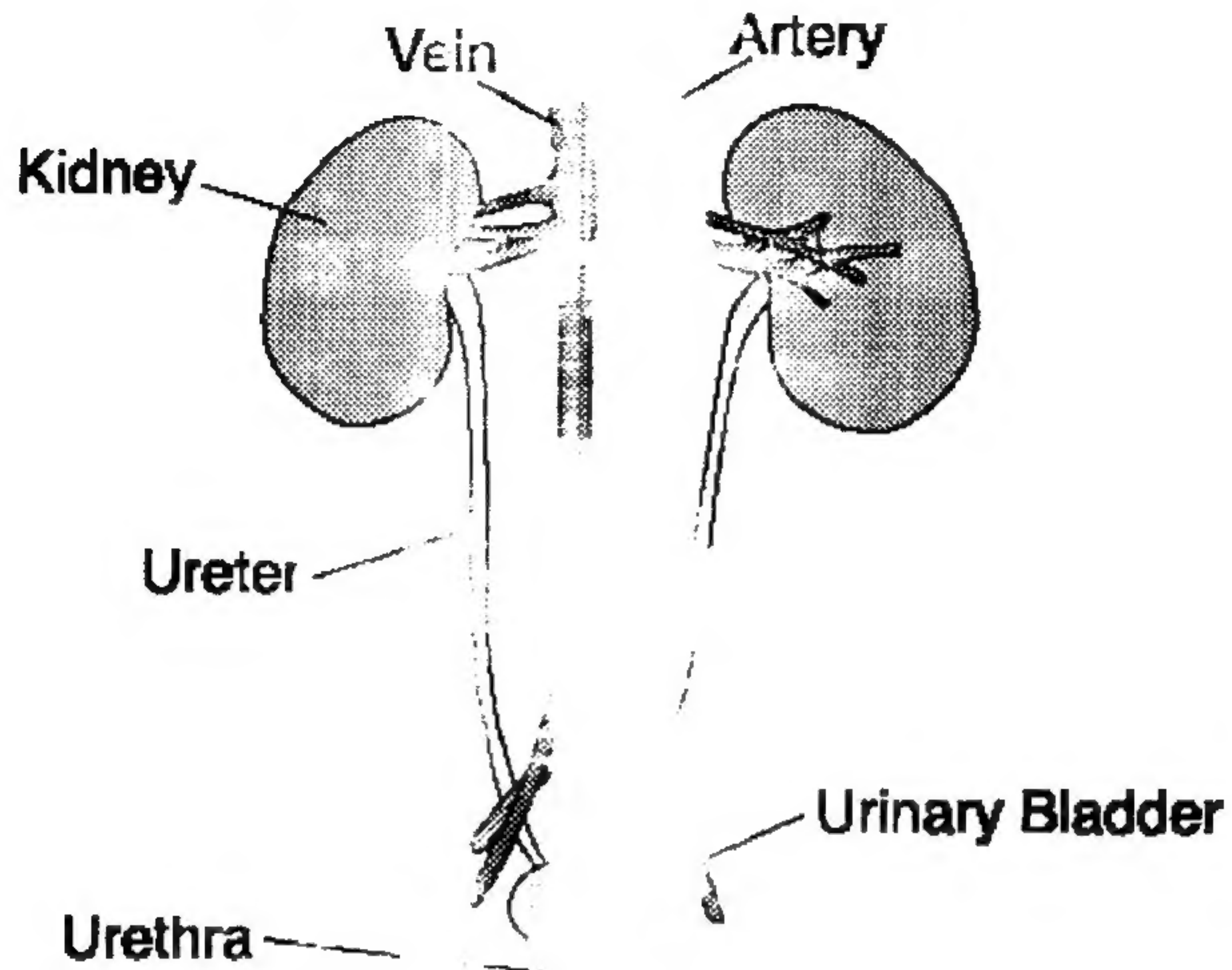
Wrap-up

Display the models prepared by students in class.

(Invite other students to see if possible)

Note: Body cutout and urinary system diagrams are given below.

Level: 5 Term: 1
Week: 6 Day: 5

Level: 5 Term: 1

Week: 6 Day: 5

Science Revision Plan

Level 2
Term 1

Week 7

Week	Curriculum Strand	Topic	Day	Specific Objectives
7	Life Systems	Human organ systems	1	Revision
7		do	2	
7		do	3	
7			4	
7		do	5	

Science Revision Plan

Level 2
Term 1

Week 8

Week	Curriculum Strand	Topic	Day	Specific Objectives
8	Life Systems	Human organ systems	1	Revision
		do	2	
8		do	3	
8			4	
8		do	5	